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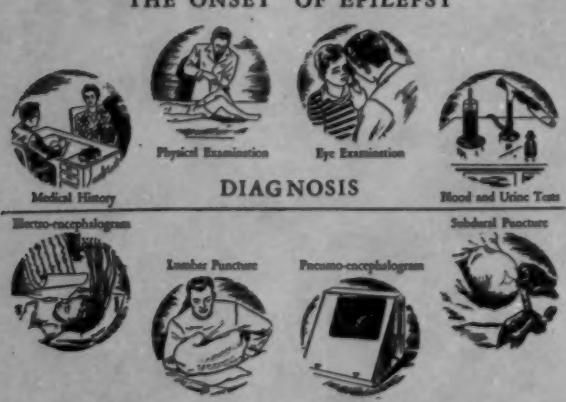

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Study of Applicants for Admission U. S. Medical Colleges—Entering Class of September, 1948

DEAN F. SMILEY, M.D., and VIRGINIA ZALESKI
Association of American Medical Colleges
Chicago, Illinois

The 71 four year medical schools and the 8 two year schools of basic medical science of the United States received a record number of applications for their entering class of 1948 (Table 1).

TABLE 1.—NUMBER OF APPLICATIONS ACCEPTED AND REJECTED FOR ENTERING CLASS OF 1948.

		Accepted	Rejected
1.	University of Alabama School of Medicine	52	679
2.	University of Arkansas School of Medicine	97	135
3.	College of Medical Evangelists	97	177
4.	Stanford University School of Medicine	86	858
5.	University of California Medical School	70	525
6.	University of Southern California Medical School	81	1,126
7.	University of Colorado School of Medicine	68	285
8.	Yale University School of Medicine	103	1,468
9.	George Washington University School of Medicine	130	2,416
10.	Georgetown University School of Medicine	185	801
11.	Howard University College of Medicine	93	651
12.	Emory University School of Medicine	74	1,071
13.	University of Georgia School of Medicine	118	282
14.	Chicago Medical School	98	952
15.	Loyola University School of Medicine	84	889
16.	Northwestern University Medical School	151	1,684
17.	University of Chicago Medical School	119	1,730
18.	University of Illinois College of Medicine	171	837
19.	Indiana University School of Medicine	162	811
20.	State University of Iowa College of Medicine	100	163
21.	University of Kansas School of Medicine	86	235
22.	University of Louisville School of Medicine	99	335
23.	Louisiana State University School of Medicine	104	498
24.	Tulane University of Louisiana School of Medicine	151	935
25.	Johns Hopkins University School of Medicine	145	498
26.	University of Maryland School of Medicine	117	333
27.	Boston University School of Medicine	71	1,311
28.	Harvard Medical School	125	1,690
29.	Tufts Medical School	134	361
30.	University of Michigan Medical School	149	677
31.	Wayne University College of Medicine	65	322
32.	University of Minnesota Medical School	131	390
33.	University of Mississippi School of Medicine	61	315
34.	St. Louis University School of Medicine	173	2,928

		Accepted	Rejected
35.	University of Missouri School of Medicine	44	48
36.	Washington University School of Medicine	118	1,626
37.	University of Nebraska College of Medicine	163	284
38.	Creighton University School of Medicine	102	495
39.	Dartmouth Medical School	24	292
40.	University of North Dakota	32	64
41.	Albany Medical College	88	2,033
42.	Columbia University College of Physicians and Surgeons	110	2,700
43.	Cornell University Medical College	117	2,940
44.	Long Island College of Medicine	153	2,309
45.	New York Medical College & Flower Hospital	120	2,182
46.	New York University College of Medicine	149	2,070
47.	Syracuse University College of Medicine	76	1,752
48.	University of Buffalo School of Medicine	76	832
49.	University of Rochester School of Medicine	116	2,072
50.	Duke University School of Medicine	110	1,297
51.	University of North Carolina School of Medicine	60	307
52.	Bowman Gray School of Medicine	49	1,102
53.	Ohio State University School of Medicine	80	463
54.	University of Cincinnati College of Medicine	121	1,350
55.	Western Reserve University School of Medicine	84	1,742
56.	University of Oklahoma School of Medicine	76	190
57.	University of Oregon Medical School	99	336
58.	Hahnemann Medical College and Hospital	123	1,258
59.	Jefferson Medical College of Philadelphia	148	1,586
60.	Temple University School of Medicine	146	3,056
61.	University of Pennsylvania School of Medicine	187	2,664
62.	University of Pittsburgh School of Medicine	97	822
63.	Woman's Medical College of Pennsylvania	70	264
64.	Medical College of South Carolina	64	181
65.	University of South Dakota School of Medicine	45	179
66.	Meharry Medical College	108	702
67.	University of Tennessee College of Medicine	143	48
68.	Vanderbilt University School of Medicine	54	1,185
69.	Baylor University College of Medicine	110	703
70.	Southwestern College of Medicine	76	877
71.	University of Texas Department of Medicine	141	425
72.	University of Utah School of Medicine	53	396
73.	University of Vermont College of Medicine	40	158
74.	Medical College of Virginia	100	427
75.	University of Virginia Department of Medicine	79	145
76.	West Virginia University School of Medicine	42	139
77.	Marquette University School of Medicine	131	1,006
78.	University of Wisconsin Medical School	84	121
79.	University of Washington School of Medicine	56	389
	Number of applications accepted	7,997	
	Number of applications rejected		73,665
	Total Number of Applications—81,662		

From these figures, it is obvious that the various schools differ widely both in their manner of selecting students and in their method of recording and reporting applications. In some schools almost every inquirer receives an application blank and upon its return that student is listed as an applicant. In some schools because of limitation of admissions to residents of the particular state or to students of a particular faith, inquiries from "outsiders" rarely result in an actual filed application; such inquiries are therefore not listed or reported as applications. In certain other schools requiring an application fee it is considered unfair to a student to let him formally apply if the entering class is already full; such a student is therefore listed as an inquirer and not reported as a definite applicant.

In view of these varying practices in the colleges, it would be a mistake for applying students to conclude that admission at colleges with acceptance-rejection ratios of 1 to 1.09 or 1 to 2.0 was decidedly more likely than at colleges with admission ratios of 1 to 20.9 or 1 to 25.1. Sometimes the reverse is true.

The number of applications reported for the entering class of 1947 was 56,553. The figure for 1948 therefore represents a 44 per cent increase over 1947.

Since the enrollment blanks for the matriculating members of the entering class of 1948 totalled only 6,497, it is obvious that the difference of 1,500 between 7,997 (applications accepted) and 6,497 (the students registering for the first time in the Freshman class) represents (1) the multiple acceptances of certain students and (2) the failure of certain students to enroll after their applications had been accepted.

It is hoped that the fortnightly lists of accepted students as distributed to the medical colleges this past year will be of some assistance in eliminating in future years at least some of the confusion created by these multiple acceptances. It is expected that this practice will be continued.

MULTIPLE APPLICATIONS

It has apparently become customary for the average prospective medical student to apply to several medical schools for admission. Fortunately, there were 10,784 students who elected to apply at only one medical school; there were, however, two students who apparently applied to 39 schools. The average of applications per student was 3.37. (Table 2.)

TABLE 2.—NUMBER OF STUDENTS MAKING SPECIFIED NUMBER OF APPLICATIONS.

1	application	made by	10,784	students	21	applications	made by	28	students
2	applications	made by	3,792	students	22	applications	made by	14	students
3	applications	made by	2,547	students	23	applications	made by	25	students
4	applications	made by	1,697	students	24	applications	made by	24	students
5	applications	made by	1,197	students	25	applications	made by	15	students
6	applications	made by	892	students	26	applications	made by	17	students
7	applications	made by	660	students	27	applications	made by	14	students
8	applications	made by	539	students	28	applications	made by	17	students
9	applications	made by	426	students	29	applications	made by	10	students
10	applications	made by	316	students	30	applications	made by	6	students
11	applications	made by	279	students	31	applications	made by	4	students
12	applications	made by	194	students	32	applications	made by	2	students
13	applications	made by	166	students	33	applications	made by	5	students
14	applications	made by	134	students	34	applications	made by	3	students
15	applications	made by	113	students	35	applications	made by	1	student
16	applications	made by	109	students	38	applications	made by	1	student
17	applications	made by	71	students	39	applications	made by	2	students
18	applications	made by	57	students					
19	applications	made by	46	students	Total number of applicants			24,242	
20	applications	made by	36	students					

Of the 24,242 applicants, 6,973 received acceptances as follows:

6,141 applicants received 1 acceptance
679 applicants received 2 acceptances
125 applicants received 3 acceptances
21 applicants received 4 acceptances
6 applicants received 5 acceptances
1 applicant received 8 acceptances

RESIDENCE OF APPLICANTS

Of the 24,242 applicants, 23,467 were residents of the United States. (Table 3.)

TABLE 3.—NUMBER OF APPLICANTS FROM EACH OF THE STATES.

Alabama	324	Nebraska	310
Arizona	72	Nevada	19
Arkansas	262	New Hampshire	56
California	1,575	New Jersey	879
Colorado	279	New Mexico	35
Connecticut	349	New York	3,762
Delaware	27	North Carolina	521
District of Columbia	196	North Dakota	76
Florida	338	Oklahoma	299
Georgia	558	Ohio	1,148
Idaho	72	Oregon	201
Illinois	1,317	Pennsylvania	2,132
Indiana	595	Rhode Island	121
Iowa	340	South Carolina	342
Kansas	277	South Dakota	102
Kentucky	389	Tennessee	364
Louisiana	386	Texas	1,018
Maine	91	Utah	175
Maryland	265	Vermont	66
Massachusetts	641	Virginia	375
Michigan	750	Washington	349
Minnesota	572	West Virginia	308
Mississippi	404	Wisconsin	415
Missouri	416	Wyoming	32
Montana	67		

Seven hundred seventy-five of the applicants were from areas outside the United States. (Table 4.)

TABLE 4.—NUMBER OF APPLICANTS FROM VARIOUS AREAS OUTSIDE THE U. S.

North America		**Central America**		**South America**	
Canada	181	Panama	33	British Guiana	3
Mexico	14			Other Countries	34
Alaska	3				
Newfoundland	2				
West Indies		**Hawaii 70**		**Africa**	
Puerto Rico	192			Nigeria	4
British West Indies	76			Liberia	1
Cuba	5			Other Countries	12
Netherlands W. Indies	2				
Dominican Republic	3				
Far East		**Middle East**		**Europe**	
China	29	Iraq	12	Greece	4
India	14	Iran	8	England	2
Korea	7	Palestine	21	Germany	1
Japan	1	Egypt	8	Norway	9
Philippines	1	Turkey	9	Denmark	1
		Transjordan	1	Sweden	1
Near East		Lebanon	4	Portugal	2
Bulgaria	1	Syria	2	Cyprus	1
Czechoslovakia	1				

It is noteworthy that six states, New York, Pennsylvania, California, Illinois, Ohio and Texas, apparently provided 45 per cent of the applicants for the 1948 entering class.

The relatively large number of applications from Puerto Rico, Canada, British West Indies, Panama, China and Palestine is of interest.

SUMMARY

1. The number of recorded applications for admission to U. S. medical schools in 1948 reached the all time high of 81,662. The comparable figure for 1947 was 56,553. The number of applicants reported for the entering class of 1938 was 36,268. The figure for 1948 represents a 125 per cent increase.

2. These 81,662 applications were made by 24,242 students. The average number of applications per student was therefore 3.37.

3. Of the 24,242 applicants, 6,141 received a single acceptance, 832 received multiple acceptances, and 6,497 matriculated.

4. The manner of accepting, recording and reporting applications differs so widely in the various medical colleges that all compilations, such as these, based on those reports must be considered as merely approximations indicating only trends and relative values.

5. The relatively large number of multiple acceptances would appear to justify the Association's recently inaugurated plan for distributing fortnightly to all schools the names of applicants who have been accepted at any school.

6. In 1948, about 1 application in 10, and 1 applicant in 3.5 received an acceptance; about 1 application in 12.5 and 1 applicant in 3.7 achieved enrollment.

7. Applicants should be warned against assuming that an acceptance-rejection ratio of 1 to 2 necessarily indicates a 10 times better chance of admission than a ratio of 1 to 20.

8. Six states—New York, Pennsylvania, California, Illinois, Ohio and Texas—provided 45 per cent of the applicants. Areas outside the U. S. provided only about 3 per cent of the applicants.

9. In some instances the relatively small group reported as applying is the result of regulations, such as residence within a state, which eliminate many able and interested students who have attempted to apply.

RECALLING THE PAST

It has often been said that "there is nothing new under the sun." One could also say that "fulfillment is a matter of time." Reading the proceedings of annual meetings of the Association of American Medical Colleges one is struck by the fact that many, if not all, of the problems by which medical educators are beset today are the same problems that were the subject of many, and, often, heated discussions twenty, thirty and more years ago. Outstanding among these problems are methods of pedagogy and the curriculum. Many of the proposals for change made in the long ago remain proposals to this day. A few have come to adoption, which emphasizes that "fulfillment is a matter of time." It seems worth while to revive what was said then by men who gave much thought to problems of teaching, men who had a good reputation not only as teachers but as authorities in their field of activity.

Public Health and Preventive Medicine for Medical Students

LEE POWERS
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Seattle, Washington

The program of study of preventive medicine and public health in the School of Medicine of the University of Washington, Seattle, has been designed to give the medical student a broad concept or philosophy of the prevention of disease. Medical students should become aware of the social, economic, emotional and environmental factors which are woven into the medical problems of their patients.

The medical student, early in his career, has an almost uncontrollable desire to see and examine sick people; to test his ability at diagnosis and treatment. Has the medical student during this process considered how this case could have been prevented? Has the medical student considered what effect this illness has had on the patient's family or on their economic position in the community?

The private physician is the keystone of any preventive medical program. If the physician develops an awareness or "point of view" of prevention, and strives to the best of his ability to prevent ill health among the families who have chosen him as their physician, then he can truly be called a master of the art of medicine, and, above all, a respected physician by everyone in the community.

How often does the practicing physician ask himself, after he has observed in the families of his patients the severe economic devastation from an illness which probably could have been prevented,—"Is there anything I can do as a private physician to prevent a repetition of this experience in other families under my care?" "Has the community failed to provide a public health service that could have prevented this condition and, if so, how can I, as a physician and a member of the community, exert my influence to see that this service is provided?" "Has the patient himself been derelict and how can I, as a physician, provide sufficient health education and awareness among the other patients who are my responsibility to prevent a similar experience?"

The recent report of the joint committee of the Association of American Medical Colleges and the American Association of Medical Social Workers rather clearly and concisely points out the problem of making the medical student aware of the social aspects of medicine: "Since the greater part, if not all, of clinical instruction has been confined to the hospital, it has been difficult to emphasize properly to the student the importance of the factors in the patient's home and community having a bearing on his illness. The patient comes to the hospital with his medical complaint but leaves his environment at home. The clinical clerk sees the patient dressed in a fresh hospital gown, lying in a clean bed in the hushed atmosphere of the hospital. . . ." "What

the student has difficulty visualizing, however, is that the patient may come from a crowded, dirty home; that the patient's spouse may also be ill . . .;" "that school age children are being denied education and a carefree childhood because the illness of the parents requires them to shoulder domestic responsibilities prematurely. It is small wonder, then, that the medical student does not become aware of the social aspects of medicine unless a conscious effort is made by his teachers to awaken him to the importance of these factors."

Dr. Raymond B. Allen in his recent book, "Medical Education and the Changing Order," states: "The character of a doctor's education is, therefore, a most important factor in its long range constructive influence on the community. . . . It should be the aim of medical education to prepare him (the physician) to fill this broader role as a responsible leader in the community, . . ."

"Medical education of the past has been concerned chiefly with education for the practice of curative medicine. . . . Medicine long since has moved beyond the problems of public health which have to do with epidemic infectious diseases. Although continued vigilance is necessary to control these diseases, the major problems of preventive medicine of the future lie in the new sphere of occupational diseases, malnutrition, maladjustment, psychoneurosis, social deficiencies generally, and health education."

The undergraduate student in medicine, if given the chance and proper experiences, readily recognizes the fact that the emotional, economic, and environmental features of illness are equally as important as the physical feature. He needs little imagination to know that the four factors are so interwoven in the patient's subjective symptoms of his disease that not one can be considered separately. Consequently, the medical student must learn, during his medical education, to recognize these features in every case as they relate to the medical problem. The student must learn how to assume the responsibility, either himself or through community health and welfare agencies, for the satisfactory solution of these social problems as a part of the medical diagnosis and treatment. The student must also understand and accept the responsibility for the preventive medical services of his families, for it is not the individual alone but the family which is the social unit. When one member of the family is involved in difficulties of any kind all are involved.

Dean Edward L. Turner and the entire staff of our medical school are thoroughly aware of the social problems of medicine, and in planning and executing the teaching program for the medical students, have provided generously, time and experiences, for the students to be well informed and oriented in the environmental, emotional and economic aspects of the practice of medicine. It should be understood that the Department of Public Health and Preventive Medicine is providing only a part of this training and experience for the students. The philosophy or "point of view" of prevention pervades all the major departments, but since the Department of Public Health and Preventive Medicine has the major responsibility the teaching program will be discussed briefly.

The objectives of the department in the training of undergraduate medical students are:

1. To give the student an understanding of the official and voluntary health and welfare agencies, common to most communities or counties, that can be of direct or indirect benefit and help to the future physician.

2. To give the student a feeling of responsibility toward his community and the health and welfare agencies with which he will have contact in caring for people.

3. To attempt to give the medical student an understanding of the importance of the emotional, social and environmental factors in the treatment and prevention of illness.

4. To graduate students well informed in the social problems of medicine and cooperative in facilitating sound and constructive solutions to these problems.

5. To give the student an understanding that the absence of the physical signs of disease does not necessarily mean optimum health.

6. To assist the student to be able to evaluate medical literature and research data through an orientation in medical statistical methods.

To accomplish, in part, the above objectives, the department presents, through integration with other subjects or separately, public health information in each of the four undergraduate years.

FIRST YEAR MEDICAL STUDENTS

In the freshman year, 22 hours are allocated to public health and preventive medicine. The first six hours are devoted to public health economics. The economic problems of medicine are approached mainly from the standpoint of the public. Current issues and programs, both domestic and foreign, are discussed. The students so far have been intensely interested and have consumed at least 50 per cent of the time in discussion and argument. The next five lectures are concerned with the economics and ethics of medical practice. The students throughout these eleven hours have, without any assignments and entirely on their own initiative, read material both in the library and that which is made available by the instructor on current issues.

The next five hours are allocated to health and welfare services and organizations including medical social work.

The remaining six hours are taken up with a consideration of chance, sampling and simple statistical methods.

SECOND YEAR

In the sophomore year, the students spend twenty-two hours in the study of medical statistics. The students complete various problems in the simpler procedures in statistical evaluation, which are designed to assist them in understanding and evaluating medical literature and research data.

Starting in the fall of 1949, the department will integrate epidemiology with the microbiology department. A small amount of time each week will

be used in the microbiology courses to discuss with the students the important public health aspects of the organisms under study during the week.

THIRD YEAR

During the past year, one hour a week (total thirty-three hours) was utilized by the department. The Junior class was organized as a medical society. The presiding officer, secretary and discussants were chosen from the class for each meeting one week in advance. The staff members of the department acted as visiting specialists, presenting the highlights of the subject in a 20 to 30 minute discussion. The discussants were given reading assignments in advance to assist them in preparation of their material. The person acting as secretary was required to take detailed notes of the meeting which were turned into the department, mimeographed and returned at the next session, thus eliminating the necessity for the class members to waste time and attention taking notes. A mimeographed textbook was prepared by the staff and specific assignments were made for study in advance of the meetings. The material included in this text or handbook presented briefly only such practical information as the staff deemed necessary for a physician to practice preventive medicine intelligently in the private care of his patients. Class participation was very active and attendance at these sessions was practically 100 per cent of all students not tied up in surgery or obstetrics.

The subject material was divided into three parts corresponding to the three quarters. The first part was devoted mainly to epidemiology of the acute communicable diseases. The second part considered the chronic and degenerative diseases amenable to public health procedures, and the last part was confined to special health programs and services.

While this method of presenting the general field of public health and preventive medicine proved very satisfactory, it was felt that the material would be even more successfully presented if it were all integrated with the clinical work. Consequently, it is planned, beginning in the fall of 19499, to integrate the course material with the clinical courses. The epidemiology has been integrated partly into microbiology in the sophomore year and partly into pediatrics and medicine in the junior year. The chronic and degenerate diseases such as venereal diseases, tuberculosis, cancer, heart disease, etc., have been integrated into medicine so that, for example, the final session in the clinical consideration of tuberculosis will be presented by a member of the departmental staff on the public health aspects of the control and prevention of tuberculosis, etc. Mental hygiene will be given at an appropriate time along with the course in psychiatry.

The special programs, such as maternal hygiene, will integrate with obstetrics and gynecology; infant, school, rheumatic fever and crippled children's programs with pediatrics; industrial hygiene with medicine, dermatology, etc.

FOURTH YEAR

During the fourth year the students attend school four quarters, (from June to June). From 4 to 6 students spend four weeks full time in a public health externship. A new group of from 4 to 6 students is scheduled every

four weeks throughout the year so that the entire class take the externship (each a total of 160 hours).

The students spend their time mainly in the facilities of the Seattle-King County Health Department and the local voluntary agencies. For example, students spend a full day in the field with a public health nurse, a general sanitarian, a milk sanitarian and other public health field personnel. They participate in a well baby clinic, venereal disease clinic and a tuberculosis clinic.

During this externship, each student is required to complete a detailed social case study of a case he has previously worked up medically. He is allowed time to visit the patient's home and the various community health and welfare agencies involved in the case. The case is then presented by the student before the senior class and interested faculty in a seminar on the last Saturday morning of the externship. This social case study is under the supervision of a well qualified and experienced social worker and in cooperation with the medical social work staff of the various local institutions.

A work book is given each student at the beginning of the externship. Assignments are made both in this work book and in the above mentioned text. The work book contains eleven sections which give the organization and services of both the official and voluntary local and state health and welfare agencies. For example, Section I—contains general orientation material for the course and assignments; Section IV—State Health Department; Section X—County Welfare Department; etc.

SENIOR ELECTIVE COURSES

Four elective courses are presently offered by the department. During three of the four senior quarters, the students have two free afternoons each week which may be devoted to electives. The electives in this department are:

1. Venereal Disease Control.—The student works two afternoons a week in the County-City Venereal Disease Clinic for one quarter.

2. Tuberculosis Control.—Two afternoons a week are spent in the County-City Tuberculosis Clinic for one quarter.

3. Well Baby Care.—This is a joint course presented by this department and the Pediatric Department. Two afternoons a week are spent in the University Child Health Center for one quarter.

4. Industrial Hygiene and Rehabilitation.—This course has not yet been initiated, but it is planned to have the student spend about one half of the time in the Seattle Rehabilitation Center and the remaining time in the State Department of Health Division of Industrial Hygiene.

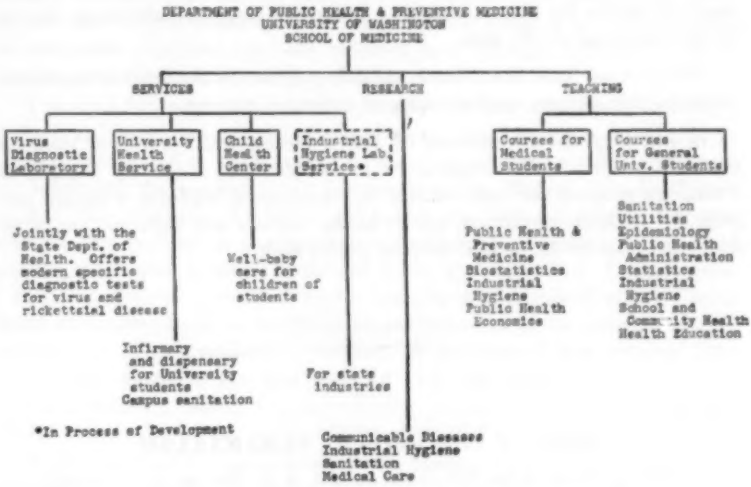
As has been pointed out, this department by no means provides the total training in this field. For example, Dean Turner has worked out an arrangement with the outstanding general practitioners throughout the state for each senior student to spend four weeks full time acting more or less as the physician's shadow. The student lives in the physician's home, makes night calls with him, observes and participates in his office practice, operations and deliveries. The student observes intimately the environment of many of the

patients and becomes familiar with some of the social and economic problems of both the physician and the patient.

The emotional problems of patients are covered thoroughly in the courses in psychiatry which are given throughout the four years of training. The Department of Psychiatry also participates actively in the social case studies and their presentation in seminar.

OTHER ACTIVITIES OF THE DEPARTMENT OF PUBLIC HEALTH AND PREVENTIVE MEDICINE

In addition to the medical school teaching program, the department provides most of the health courses for the general university and offers three undergraduate degrees in public health: Sanitary Science, Public Health Statistics and Health Education. Thus preparing subprofessional personnel for local health departments.



One of the important teaching responsibilities of the department is the provision of the health courses required of all teacher candidates in the College of Education. The department feels that proper health education in the elementary and secondary public schools is equally as important as an informed medical profession in the social problems of medicine. Therefore, teachers must be properly equipped to provide sound education in health.

Short courses, refresher courses and extension courses are provided occasionally for the public health personnel throughout the state. A monthly seminar in public health is sponsored by the department for students and the local health and welfare personnel of voluntary and official agencies.

The department provides direct and indirect services to the students and citizens of the state. (Chart.)

A virus diagnostic laboratory is maintained by the Department in cooperation with the State Department of Health and provides virus and rickettsial diagnostic service for the physicians throughout the state.

A demonstration and teaching well baby clinic is directed by the department in cooperation with the Department of Pediatrics. This clinic is financed by the State Department of Health through a grant from the Children's Bureau. Six schools or colleges of the university use the facilities of this clinic in their teaching programs.

The Health Service for all the university students is also a part of the department and is housed in a modern seventy-five bed infirmary and dispensary building.

The department is now in the process of arranging with the State Department of Health for the provision of Industrial Hygiene Laboratory Service for the industries of the state.

Last, but not least, is an active research program in the fields of sanitation, communicable disease, medical care and industrial hygiene.

In summary, the Department of Public Health and Preventive Medicine of the University of Washington School of Medicine is actively engaged in a teaching program for both medical and nonmedical students; a service program for students, physicians, public health workers and industry, and a research program in the general fields of public health.

WHAT IS THE MEDICAL CURRICULUM?

In a paper read at the 20th annual meeting of the Association of American Medical Colleges, March 21-22, 1910, Dr. Wm. H. Welch, Johns Hopkins University, defined the curriculum as follows:

"What is the medical curriculum? It is only a means to an end. It is the machinery, the system—very important, but you may have an admirable system and very poor results. On the other hand, you may have a bad system and results good out of all proportion to the character of the system. I think we are short sighted to a certain extent in our criticisms of the old fashioned medical schools. Considering the badness of the system, the results were good out of proportion to it. I was trained under that system myself. One could not sit under John Dalton without getting an education, an inspiration, a stimulus for the rest of one's life. It demands personality on the part of the teachers to make a system of any value, so that we must not look on the medical curriculum as anything more than a method of attaining certain ends."

A Study of Methods for the Improvement of Cancer Learning in the Medical School; First Annual Report*

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INTRODUCTION

Teaching methods in American medical education have developed through a slow and unfettered evolution influenced greatly by the progress of medical science.[1] In few fields has the effect of this natural development been more evident than in the teaching of oncology.[2] Slow progress in understanding the neoplastic processes has been reflected in a lethargic interest in cancer teaching resulting in a limited approach to cancer research.

The need for improving cancer instruction for the undergraduate medical student had been recognized for some time at the University of California Medical School, and in 1947, the results of an inquiry into possible procedures for improving the teaching were submitted to the Medical School's Cancer Board.[3] The conclusion reached in the report was that not enough objective evidence was available as to the relative effectiveness of existing or suggested teaching techniques to permit a selection of any specific method. Consequently, a proposed plan for a study of cancer learning was submitted to the Cancer Board and subsequently to the Curriculum Committee in the summer of 1947 and put into effect immediately thereafter.[4] A grant-in-aid from National Cancer Institute funds to the University of California Medical School by the National Advisory Cancer Council effective in March, 1948, permitted considerable expansion of the undergraduate phase of the cancer teaching project.

Assistance of all the agencies within the Medical School interested in teaching and in cancer was, of course, necessary to the success of the project to date and this assistance has been given freely. In particular, those largely responsible for the implementation of the project are Dr. Francis S. Smyth, Dean of the University of California Medical School, the members of the Cancer Board and their chairman, Dr. Robert S. Stone, the personnel of the Laboratory of Experimental Oncology, and the members of the faculty who are directly involved in the teaching of cancer.

The plan of the project and the progress thus far are shown in Table 1.

TABLE 1.—OUTLINE OF CANCER TEACHING PROJECT AT THE UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL.

I. PRELIMINARY PROCEDURES
- A. Survey of amount of present cancer teaching.
- B. Educational consultation.
- C. Evaluation of cancer knowledge.

*From: Cancer Research Institute, The University of California Medical School, San Francisco.

II. INSTRUCTIONAL TECHNIQUES
- A. Regular meetings of the staff.
- B. Tumor boards.
- C. Student manual.
- D. Visual aids.
  1. Slides for projection.
  2. Pictorial charts.
  3. Grooved announcement boards.
  4. Plastic mounts for pathological specimens.
  5. Motion pictures.
- E. Freshmen clinical seminars.
- F. Wire recording of lectures.
- G. Correlation with library.
- H. Visiting lecturers.
- I. Associated activities.

III. EVALUATING THE PROJECT
- A. Objective achievement examination.
- B. Faculty interviews.
- C. Student questionnaires.

PRELIMINARY PROCEDURES

SURVEY OF CANCER TEACHING

It was thought advisable, first, to survey the amount of time spent in teaching oncology in relation to the total curriculum in this particular school. Personal interviews were undertaken with each member of the faculty who was involved in any way in the teaching of cancer. Thirty faculty members partook in this phase of the study and willingly offered their information (Table 2).

TABLE 2.—COMPARISON OF NUMBER OF SEMESTER HOURS DEVOTED TO CANCER TEACHING AND TOTAL SEMESTER HOURS OF INSTRUCTION AT UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL FOR THE SCHOOL YEAR 1947-1948.*

Division of Medical School	Semester Hours	
	Total	Specifically Devoted to Cancer†
Neurosurgery	44	17
Neurology	40	2
Obstetrics and Gynecology	328	33
Pediatrics	258	2
Dermatology	96	21
Medicine	920	24
Preventive Medicine	144	1
Surgery	698	85
Pathology	336	131
Legal Medicine	16	0
Radiology	28	10
Anatomy	624	3
Physiology	224	0
Biochemistry	256	2
Bacteriology	160	0
Psychiatry	118	0
Pharmacology	176	0
Total	4,466	331

EDUCATIONAL CONSULTATION

For the proper implementation of the project, the counsel of the faculty of the University of California School of Education was obtained, and upon their recommendation a predoctorate fellow in educational psychology was employed.

EVALUATION OF CANCER KNOWLEDGE

It was recognized that a measuring device of some sort was necessary if the success of the project in improving learning was to be evaluated. For this purpose, a comprehensive, multiple choice, objective examination was prepared. There were 182 questions in an examination period of three hours, approxi-

*In many courses, cancer is considered incidentally as it relates to the subject matter of the course.

†Lecture and laboratory hours.

mately one question per minute. Superior students were expected to complete the test in one-half or one-third of this time, but the examination was deliberately made to be a test of knowledge rather than one of speed.

The distribution of the test items within the various phases of cancer was guided by the number of hours of didactic instruction as reported in the survey. Test items submitted by members of the faculty were examined for duplication of material, ambiguities, specific determiners and other factors which might adversely affect the items' validity. Two oncology staff members then searched the subject matter carefully to eliminate possible inaccuracies, controversial points, and other invalidating factors. The final distribution of the test items was as shown in Figure 1.

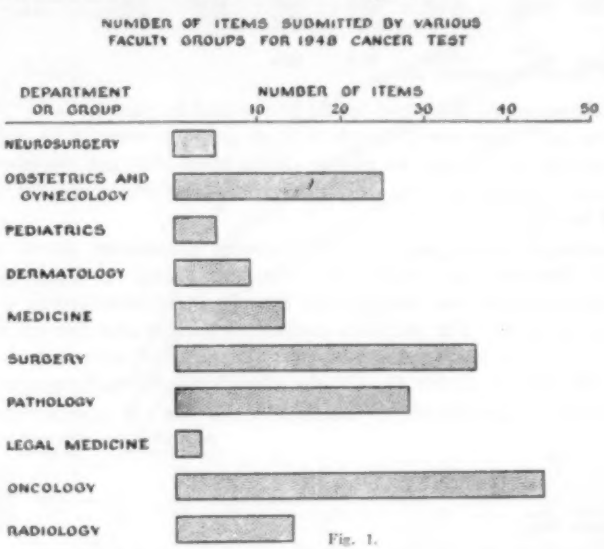

Fig. 1.

Two examples of the test items are:

1. The symptoms of pheochromocytoma can be reproduced or caused by excessive secretion of:

a. desoxycorticosterone
b. epinephrine
c. corticosterone
d. posterior pituitary pressor substance
e. renin through renal ischemia

2. You have, in your opinion, adequately studied a man, aged 23, with abdominal pain. The characteristics of this pain are compatible with a peptic ulcer. The pain has been present over a one year period, and during this period the patient has lost ten pounds in weight. The radiologist has reported to you that an ulcer is present in the first portion of the duodenum. The most important consideration to you in concluding that a benign ulcer is present, rather than a malignant one, is

a. the age
b. duration of the pain
c. the presence of free acid in the gastric secretion
d. the loss of only ten pounds in weight
e. the location of the ulcer

Administering the test: The test was given simultaneously to 279 students of the Medical School and also to 22 interns in May, 1948.

Test results: The over-all range of scores on the test was from 43 items correct, a score obtained by two first year students, to 138 of the 182 items correct, a score obtained by one senior and two interns (Table 3). The most

TABLE 3.—CRITICAL DATA ON SCORES FOR UNIVERSITY OF CALIFORNIA MEDICAL SCHOOL GROUPS TAKING THE 1948 EDITION OF THE CANCER TEST.

Group	Number Taking Test	Range	Mean	% of Total Correct	Standard Deviation	Standard Deviation of Mean	Standard Error of Difference Between Means	Critical Ratio
First Year	70	43- 70	55.7	30.6	6.30	.75)	1.46	22.1
Second Year	72	60-112	87.9	48.3	10.60	1.25)	1.93	7.2
Third Year	69	72-134	101.7	55.9	12.25	1.47)	1.93	5.0
Fourth Year	68	90-138	111.4	61.2	10.35	1.25)	2.64	3.6
Interns	22	96-138	120.3	66.4	10.95	2.33)		
Total	301							
Averages		43-138	91.8	50.4				

Total number of questions: 182

probable score on the test which would be obtained by guessing is 36.[5] Actually there was only about one chance in four of getting a score of 43, the lowest score obtained on the test, by chance. More likely than not, therefore, even the lowest ranking first year student knows something about the material covered by the test.

Considerable overlapping of scores between consecutive classes occurred (Fig. 2). However, the critical ratio[6] was large enough in each instance to demonstrate that the test distinguished between consecutive groups at higher than the 1% level.[7] The reliability coefficients indicate that the test is of no value in measuring relative cancer knowledge of one first year student as compared with another (Table 4). On the other hand, for ranking sophomores,

TABLE 4.—COEFFICIENTS OF RELIABILITY FOR THE 1948 CANCER TEST.

Class	Reliability Coefficient*	Standard Deviation of Reliability Coefficient
First Year	.10	.117
Second Year	.75	.055
Third Year	.80	.043
Fourth Year	.69	.063
Entire School	.90	.011

*Corrected by the Spearman-Brown prophecy formula.

juniors, and seniors within their respective classes the test is as satisfactory as are most objective type achievement examinations. It is considerably better than the usual essay examination for this purpose. Elimination of undesirable items and other possible improvements should increase the reliability in subsequent editions of the test.

Senior performance on the test: Some items were missed by all and some by none of the seniors. Average success on each of the items was 62%; that is, on items of average difficulty, 40 of the 68 seniors answered correctly. On the whole, the items tended to be somewhat easier than they should

5. One-fifth of the total possible score of 182.

6. Critical ratio = $\frac{\text{Difference between means}}{\text{Standard error of difference between means}}$

7. At the 1% level there are ninety-nine chances in one hundred that there is a true difference between the groups being compared.

have been for optimum ranking of the seniors, but the preponderance of "easy" items was necessary if lower classmen were to be measured by the same test.

For the seniors fifty-five of the test items were either negative or zero discriminators.[8] Analysis of the scores made on these items by other classes did not find the same 55 items negative or zero discriminators in all cases,

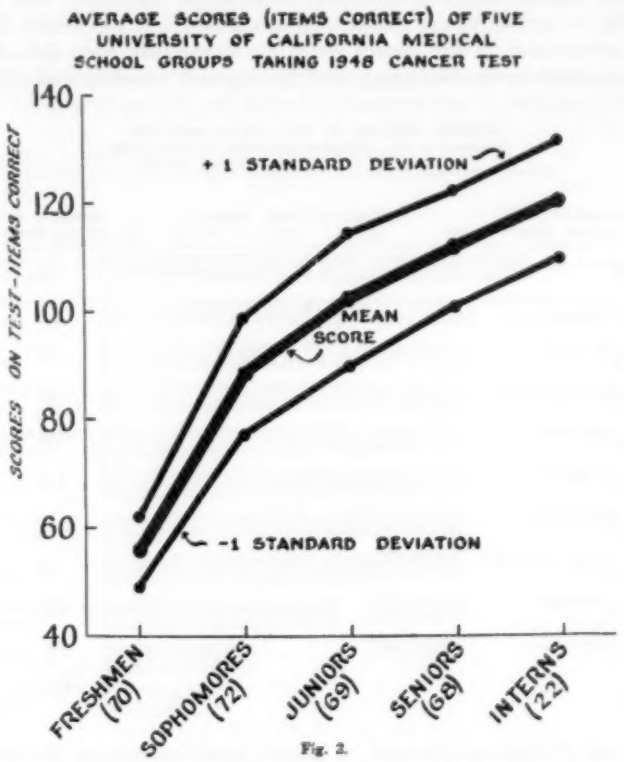

Fig. 2.

but these items clearly are of little value in ranking the seniors. Consequently, all of these items will be carefully reconsidered for subsequent editions.

The test items were grouped according to the divisions of the Medical School submitting them, and the scores of the seniors on these groups of items were obtained (Fig. 3). The per cent score is the average per cent of the items answered correctly in each subtest by all members (68) of the class.

Caution must be exercised in drawing conclusions from this information. The number of items from which the average per cents were calculated varied

8. The poorer students answered these questions correctly more often than, or at least equally as often as, did the good students. In most cases this indicates that all of the seniors were well informed on these items.

from 3 to 42; consequently, since the number of students answering each item was constant, the values obtained from the smaller number of items are not as reliable as those obtained from larger numbers of items. Secondly, there was considerable overlapping of subject matter in the items, so that many questions measured knowledge in areas touched upon by several divisions. Furthermore, the fact that the per cent score was higher for one group than for another does not necessarily warrant the conclusion that student learning was greater in the former than in the latter. It is probable that test items propounded by one faculty group are intrinsically more difficult than those prepared by another group, and the apparent superiority of the learn-

AVERAGE PERCENT OF TEST ITEMS ANSWERED CORRECTLY BY SENIORS ON 1948 CANCER TEST: BY FACULTY GROUP SUBMITTING ITEM

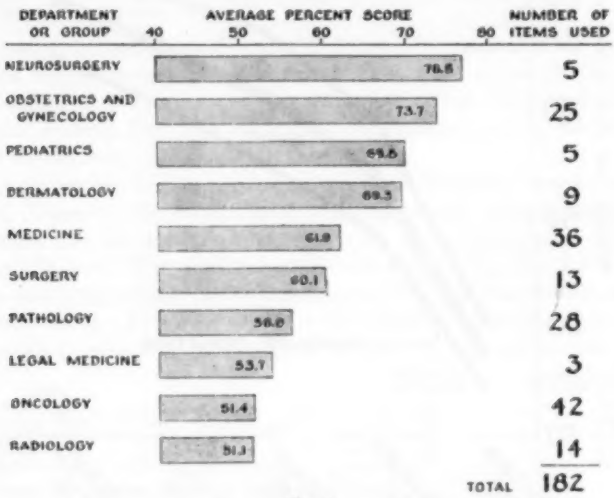

Fig. 3.

ing in one division as compared to another therefore may be illusory. On the other hand, it is likely that the obtained ranking of the divisions is not entirely spurious and that real differences in learning of cancer do exist among the various divisions, although the correct ranking may be somewhat different in minor detail from that observed.

The items were also classified on the basis of subject areas in cancer (Fig. 4). Definitions of the terms used to describe these follow:

1. Precancerous conditions describes those items the answers to which were believed to indicate the student knowledge of pathological conditions likely to eventuate into neoplastic growths.

2. Diagnosis (gross) includes items believed to measure students' ability

to detect cancerous conditions by physical diagnosis alone, without any clinical aids.

3. Diagnosis (clinical method) includes items which measure student ability to diagnose neoplastic conditions by means of information supplied by aids other than physical diagnosis.

4. Diagnosis (total) includes all items intended to measure student ability to detect a neoplastic lesion by any means (gross and clinical) currently available.

5. Biology of tumors represents those items which test the students' knowledge of the general growth and behavior characteristics of neoplastic tissues.

AVERAGE PERCENT OF TEST ITEMS ANSWERED CORRECTLY BY 68 SENIORS ON 1948 CANCER TEST: BY SUBJECT AREA OF CANCER

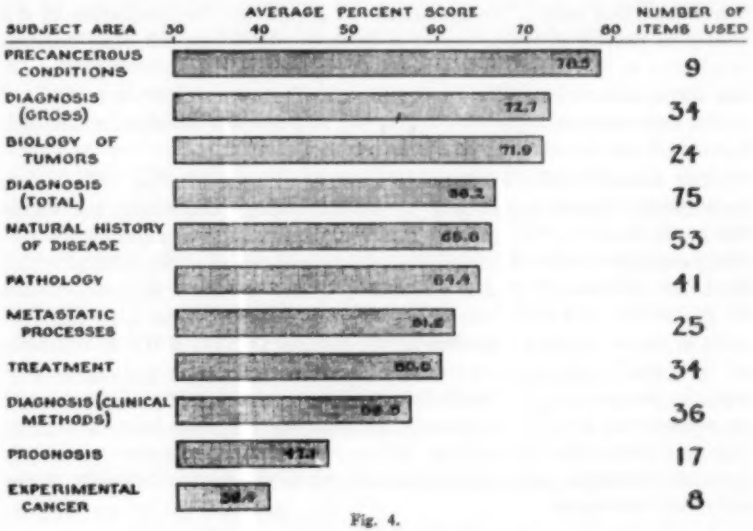

Fig. 4.

6. Natural history of disease refers to those items which measure the knowledge of the course of untreated neoplastic diseases.

7. Metastatic processes defines those items intended to measure the students' knowledge of metastases associated with neoplastic growths.

8. Treatment covers items which were planned to reveal the students' knowledge and judgment in applying techniques for treating various types of cancer.

9. Prognosis questions were those which measured the students' prognostic acumen as to the future course of the disease, either with or without treatment.

In obtaining scores on these groups no attempt was made to make the categories mutually exclusive. In addition possible variations in intrinsic difficulty of items may have resulted in questionable ranking of the groups. On the other hand, it is unlikely that the subjects listed below the average (62%) are actually as well understood by the students as are those shown above the average.

INSTRUCTIONAL TECHNIQUES

Before the over-all plan of the project could be put into operation it was necessary to make two basic decisions. The first was the decision to conduct the experiment entirely within the framework of the existing curriculum. Some medical schools are revising their curricula to include a course devoted entirely to cancer. At the University of California Medical School it was felt that not enough was known about just what should be included in a course of this sort to warrant revising the curriculum at this time. Furthermore, it was feared that such a revision would interfere with the integration of the numerous courses to which cancer is common. However, the basic question is whether or not cancer learning can best be improved by retaining the existing curriculum or by adding a new course of study. Information obtained in the contemplated measurement program may indicate whether or not such a course should be introduced.

The second decision involved the question of experimenting with various instructional devices sequentially or simultaneously. Ultimately, the choice fell to the latter on the grounds that (1) there was little experimental evidence available on the efficacy of any of these techniques at the medical school level, (2) the time required to test each proposed technique separately would be prohibitive, (3) there was urgent need to obtain at least some improvement in cancer learning regardless of the method, and (4) if the simultaneous or "shot-gun" technique was successful in improving cancer learning in general, the precise value of the factors contributing to this improvement could be worked out later. Consequently, all methods described below are being employed during the current year. When evidence of improvement in cancer learning is observed, attention will be focused on the success or failure of the individual techniques.

Regular Meetings of the Staff.—Staff meetings of all instructors who contribute to the teaching of cancer in the Medical School are being held in the belief that fuller cooperation of the faculty can be obtained by keeping the instructors completely informed of all the plans for the project and by encouraging them to offer criticism and comments.

Smaller conference groups composed of instructors from single divisions of the Medical School are also meeting for the purpose of considering cancer instruction on a departmental basis. In these group meetings cancer instructional problems peculiar to the particular division as well as more general considerations are discussed and courses of action are outlined.

Tumor Boards.—The Consultative Tumor Board, composed of a pathologist, radiologist, internist, gynecologist, surgeon, and oncologist meets weekly

for one and one-half hours. The Board assists physicians both in the University of California Hospital and elsewhere in California who refer patients presenting problems in the diagnosis and treatment of cancer. Senior and sophomore students in small groups are required to attend the Board meetings. At these conferences the students gain insight into the combined consultative method of handling patients.

A Clinicopathological Conference which is devoted primarily to demonstrations and discussions of neoplastic processes is also held weekly at the San Francisco County Hospital for the junior students.

Student Manual.—A 246 page manual has been developed containing outlines and abstracts of most of the didactic lectures in oncology given by the faculty. Extensive bibliographic references are included, and space is provided for student notes to supplement the lecture material. A second part of the manual contains abstracts and articles on oncology of current or unusual interest with additional bibliographic references. A pictorial review of the major forms of cancer is being added.

Copies of the manual have been distributed to the members of all four classes in the Medical School, each student receiving only that part which covers courses he has taken in previous years or will take during the current school year. The manual will be recalled periodically in order that revisions and additions may be made, and it will become the permanent property of the student upon graduation. It is hoped that the student will use the cancer manual freely, that it will aid him in organizing and integrating the subject with other fields of medicine, that he will find it a useful, familiar, and ready reference as he begins his postgraduate activities, and that it will arouse and maintain in him a continuing interest in cancer.

Visual Aids.—Collaboration with the Medical Illustration Section in the preparation of charts, figures, and other illustrative material for use in any lecture or demonstration on cancer has been arranged. The Photography Laboratory prepares slides or photographs of these materials for lecture purposes. The illustrations and slides are being filed so that they will be available for use by any instructor.

A series of displays on major types of cancer is being prepared as another means of employing visual instruction. The displays will consist of a group of 30″ x 40″ pictorial charts depicting the natural course of the disease and the physiology, biochemistry, histology, and pathology of the organs or systems involved. The metastatic destiny, diagnostic measures, therapeutic indications, and pertinent x-ray findings are included. These displays are to be used in lectures and will be on exhibit in the halls of the Medical Center. The charts, or slide reproductions, are to be available on loan for educational purposes outside the school. Photographs of the charts will appear in the 1949 edition of the students manual.

Three grooved announcement boards have been placed at vantage points in the Medical Center. Two of the boards present information on weekly

activities in oncology and list the cases to be presented before the Consultative Tumor Board. The third faces the entry-way in the library and contains references to current articles and books on cancer.

The preservation of neoplastic specimens in transparent plastic blocks is currently being studied. This type of mounting is particularly adapted to repeated handling, and should prove to be of great value.

While no motion picture films on cancer are being produced by this project, those that are available and that appear to offer instructional possibilities at the undergraduate level are being employed.

Freshmen Clinical Seminars.—Analysis of the 1948 examination revealed that the freshman group average was just 16 above what should be expected from pure guessing, despite the three to four years of premedical education and one year of medical school training which each student had completed (Fig. 2).

To study the effect of an early clinical exposure, arrangements have been made for the freshman students to attend a series of clinical demonstrations on neoplastic diseases which are ordinarily intended for the junior students. Attendance at these seminars may aid in orienting the freshman student to cancer and may motivate him in his future studies of neoplastic processes.

Recording of Lectures.—Two wire recorders are being used to chronicle lectures, conferences, clinics, seminars, and similar meetings on cancer. From the recordings, lectures of especial importance and discussions of particularly interesting cases are retained for replaying to subsequent classes, for use as a reviewing device by student groups, and to permit the instructor to hear his own lectures. Other uses for the recordings are currently being investigated.

Correlation with Library.—Literature is to be made more accessible in the library through the installation of display shelves prominently placed and devoted exclusively to periodicals and other publications on cancer. In addition to this, an effort is made to have copies of all books and periodicals which are listed in the manual available in the library.

Visiting Lecturers.—Prominent authorities in medicine who are visiting in the vicinity of San Francisco are invited to lecture on neoplastic diseases to the medical students and faculty. Ten lecturers have already presented interesting topics at the University of California Medical Center during the first four months of the 1948-1949 school year.

Associated Activities.—Mention should be made of the various other medical school activities not operated directly for the instruction of the undergraduates and therefore not formally covered in this report but which are nonetheless active in cancer education, though usually at a higher or graduate level.

The Cancer Research Institute conducts a Visible Tumor Conference weekly throughout the school year. The membership consists of representation from staffs of the dermatological, general surgical, plastic surgical, dental,

and radiological divisions. It sees nearly all patients with visible tumors of the skin and mouth who come to the clinics conducted by these divisions on both initial and follow-up visits. It also sees patients referred to it for consultation.

Several other conference groups also meet regularly to discuss neoplastic diseases. Among these are (1) joint conferences of the radiological and gynecological staffs, (2) a conference on blood diseases for considering patients with leukemias and allied diseases, (3) a thyroid committee that sees patients with cancer of thyroid as well as other thyroid disorders, and (4) grand rounds or conferences held by the clinical and pathological divisions at which cancer cases frequently are discussed.

The Laboratory of Experimental Oncology, a section of the National Cancer Institute of the U. S. Public Health Service is attached to the University of California Medical School. It carries on a large program of research in cancer with excellent facilities for teaching. Daily rounds are conducted in the research wards of the laboratory for faculty and staff.

The Cancer Research Institute operates a general tumor registry where a comprehensive record of all tumor cases seen at the University of California Hospital or its outpatient department are filed and analyzed by the punch card method. It provides statistics for teaching purposes.

Arrangements are being made to conduct a two day symposium on some phase of cancer every six months. The first of these will be held in June, 1949. These symposia are to be aimed at a high level to attract the staff of the Medical School and practicing physicians of California, as well as upperclass students. The subject matter of these symposia will be chosen to cover the subject in as detailed a manner as possible in the allotted time. This phase of the cancer teaching is conducted by the University Extension Division under the supervision of Dr. Stacy R. Mettier.

While medical student participation in these associated activities is not compulsory, they are always welcome and many attend them.

EVALUATING THE PROJECT

The comprehensive examination will be revised annually and readministered to all students of the Medical School at the end of each spring term for the next five years. Because considerable interest in this examination has been shown by cancer coordinators in other medical schools, the improved examination will be administered to a few selected schools throughout the country in April and May of 1949. From the larger and more representative sample thus obtained more reliable information on the state of cancer instruction in this and other medical schools should be revealed.

Other less objective measures are also being employed in evaluating the cancer program at the University of California. An annual evaluation by the senior students of their instruction is made on a questionnaire provided by the school. The results of the evaluation are confidential, and are seen only by the Dean or his authorized agent. This questionnaire affords material for

comparison with other data obtained in the cancer teaching program. Moreover, members of the faculty and student body will be polled directly from time to time on their views as to the success of the various phases of the teaching project and their recommendations for improving cancer learning.

Data from the analyses of the cancer teaching project are submitted to the Cancer Board, the Curriculum Committee and then to representatives of the major divisions in the Medical School for consideration of possible measures to insure proper coverage of all topics in cancer. The information derived from the cancer teaching project likewise is available at any time to all instructors in cancer so that it may assist them in revising their own treatments of the subject.

SUMMARY

1. The first year of an experiment in the improvement of cancer learning at the University of California Medical School has been completed.

2. Members of the faculty first were interviewed personally to determine course content and time devoted to cancer instruction. Approximately, 330 semester hours (formal lectures and laboratory) are devoted to the teaching of cancer during the four year course of study.

3. An evaluation of the cancer knowledge of the student body at the outset of the experiment was made by a comprehensive objective examination. Two hundred seventy-nine students, comprising the entire student body of the school, and twenty-two interns were tested. While the examination revealed a significant yearly increase in knowledge to the intern level, it also indicated considerable need for improvement at all levels.

4. Fourteen modifications of recognized or new techniques in teaching have been introduced into the curriculum in an attempt to improve cancer learning. Most important among these are preparation of a 246 page cancer manual for all students, introduction of numerous visual aids, wire recording of lectures, visiting lecturers, and faculty conferences.

5. The program will be evaluated annually by comparable editions of the comprehensive examination, by faculty interviews, and by student questionnaires.

6. The objective examination on cancer will also be administered to students of other, representative medical schools during 1949.

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The Liverpool School of Tropical Medicine

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London, England

In all probability, the tremendous growth of many African and Asian races may be regarded by future historians as one of the most outstanding features of our present age, surpassing even the importance of war and postwar policy. This development has already caused headaches to food experts who plead constantly with politicians not to concern themselves so much with the petty differences of the day, but to turn their attention to the major problem of feeding the people and the people's children in the future.

The increased growth of these races has many causes; one of the more important is the gradual but progressive spread of a positive health attitude. Illnesses once considered lethal or incapacitating—malaria, in the forefront—can now be prevented, or, should they arise, treated and often cured. This change has occurred in a mere half century,—a very short time in medical or social history. A leading role in this connection was played by one of the first Schools of Tropical Medicine in the world which was founded some 50 years ago, in 1899, in Liverpool, England.

Toward the end of the last century, the importance of providing instruction in tropical medicine to medical officers of the Colonial Medical Service became more and more essential. Mr. Joseph Chamberlain, at that time Britain's Secretary of State for Colonial Affairs, recognized this fact and tried to interest medical schools in specialist courses of tropical medicine. As an indirect result, a Liverpool shipowner, Sir Alfred Jones, generously came forward and founded the Liverpool School for Tropical Medicine.

The early history of the school is a record of struggle. It had no assured income, depending for its existence on the generosity of a few Liverpool businessmen; it was not afforded Government support at first, but in 1901, the Government gave it full recognition and placed it on the same footing as the London School of Tropical Medicine which was opened in 1900.

In 1899, the first research expedition organized by the school was dispatched to Sierra Leone, West Africa, and it was the first of 32 similarly equipped expeditions to West and Central Africa, Brazil and the West Indies. The material collected during these expeditions was brought to Liverpool for scientific investigation in the school's laboratories.

A new chapter in the school's history was begun in 1921 when the "Sir Alfred Jones" Laboratory was founded in Freetown, Sierra Leone. A succession of brilliant directors were in charge of the laboratory over a period of 20 years during which time work of fundamental importance was carried out. Many internationally famous specialists were trained there, including the present Professor of Tropical Medicine in Tulane University, Louisiana. In

1941, the illness of the Director of the Laboratory forced its closure, but its main task had by then been completed. In its stead, the Liverpool School made its headquarters in Freetown which, during the war, had become the chief refueling base for Allied convoys, where the work of cutting down the incidence of malaria among ships' crews and troops was carried on.

The first expedition in 1899 was carried out in the fight against malaria in Africa; it was headed by the late Sir Ronald Ross who had previously identified the parasites of malaria in mosquitoes. Sir Ronald and his colleagues of the Liverpool School later extended their work to cover North and South Nigeria and the Gambia, where they developed various methods of mosquito control.

The sixth expedition to the Gambia, in 1900, was of no less significance to medical history. It was during this latter expedition that the causes of sleeping sickness were identified. Subsequent visits to British West and Central Africa were undertaken and the results of research during previous expeditions were confirmed and added to. As a result of an appeal made to the school by the then King of Belgium, another expedition left for the Congo Free State in 1903, and the study of yellow fever was concentrated mainly in Brazil.

In a relatively short time, plans for the control of these diseases were completed. During World War I, quinine was used in the fight against malaria; in World War II, an important step forward was the introduction of paludrine. Today, every merchant seaman serving in ships visiting West Africa and other tropical ports, knows the center belonging to the Liverpool School of Tropical Medicine where he may obtain treatment with the latest antimalarials at any time. Plans for the enlargement of the Liverpool School Buildings will, in the near future, enable the school to expand its field of activity still further.

PITY THE STUDENT

"The amount of information the medical student is expected to retain is beyond all reason. If he should succeed, indeed, we might say: 'and still the wonder grew, that one small head should carry all he knew.' But he does not succeed; and his laboratory work is likely to be done mechanically and his clinical investigations are in danger of being slighted in consequence. It is like making a pumpkin grow from a strawberry blossom, certainly a difficult undertaking and not very desirable." (J. B. DeLee: Proc. A. A. M. C., 24th Annual Meeting, Feb. 25, 1924.)

Medical Research in the United States*

1947: Impressions of a French Professor of Pediatrics

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The United States of America has decided to become the world center of scientific research. This thought accompanies the visitor at each step of his way through the institutes and laboratories of the New World. French influence was formerly based on the diffusion of its language, its thought, its manners and its customs; Germany's, to the traveler's eye, was translated by its military parades; Great Britain's by the size of the port of London and the power of the city. In the United States, leadership today is expressed by a tremendous and incessant development of techniques. No progress is considered permanent; everyone expects that tomorrow's advance will upset everything. Objects made since the remotest antiquity of wood are now made of synthetic materials—and cloth from glass thread! The ways of cooking food, of building houses, will keep changing, thanks to discoveries that are foreseen whose immediate application is anticipated, for there is no time to lose! The new techniques apply to everything. One sees equal solicitude for perfecting the atom bomb, for making more active the insecticides which protect plant culture, for creating artificial clouds to make rain fall where it should when it should and for "perfecting" the raising of Christmas turkeys, in order to produce a little race of animals capable of being cooked in the ovens of electric stoves. The National Bureau of Standards, to which President Roosevelt confided the project of adapting atomic energy to warfare, is the seat of fundamental research in the domains of chemistry, of physics and of mechanical engineering. It is the trying out place as much for nylon stockings as for structural steel. Research institutes, schools and laboratories are the pride of the country. Very numerous, monumental in size, well endowed, serviced by thousands of workers, these organizations are for Americans the foundation of their power: Industry and agriculture, as well as the Army and Navy, city planning and housing, methods of work, the comfort of everyday life hang on their decisions and, in truth, depend on their surveys, their recommendations and their discoveries. These latter are widely spread by a well informed press to a public avid for this sort of information. What strikes anyone who compares the America of today with that of a quarter of a century ago, is an increased tendency to abandon old European routines and an ever

*La Recherche médicale aux Etats-Unis, Revue de Paris, mai 1948, p. 130—translated by G. M. Guest, Department of Pediatrics, University of Cincinnati College of Medicine, and A. Cournand, Department of Medicine, Columbia University College of Physicians and Surgeons, New York.

†This report is based on impressions gathered during visits Dr. Debré made to a number of medical schools and research institutes in the United States during June and July, 1947, before participating in the International Pediatric Congress held in New York. The esteem in which Dr. Debré is held internationally is indicated by the fact that he was chosen by delegates of the more than fifty nations represented at that Congress, to speak for them collectively in reply to the address of welcome by the American President of the Congress, Dr. Henry Helmholtz.

more pressing search for something new. It is in this framework and in the midst of this atmosphere that the singularly strong medical effort of the United States takes place.

That effort benefits also by other factors. The desire to protect human life from suffering and death is greater than the desire for social justice in the sense understood by the peoples of Europe. America does not resign herself easily to pain and seems to want to banish death. Victory over the difficulties and miseries of life is more often glorified than self sacrifice.

Besides, one must not forget that everything is established on vaster proportions than in little Europe. The scale, as we say, and with reason, is not the same: thus, hundreds of pathological cases can easily be collected, and the conclusions drawn from their study are more reliable than those drawn from isolated observations, no matter how profound and subtle the latter may be.

Each of the great universities of America has a School of Medicine. These are richly endowed. American generosity—one of the finest qualities of that people—heaps on them large grants. They are really spoiled, pampered, those Schools of Medicine, and one marvels at the abundance and quality of their equipment. They are designed to instruct a small number of pupils "winnowed" from numerous candidates, whose intellectual and moral qualities are taken into consideration in the delicate problem of their selection.

Each stage of promotion in these very select schools involves sound basic education. One cannot speak too highly of the preclinical studies of biology, biochemistry and physiology. This practice—which we, for our part, have long considered excellent—is opposed to our usual arrangement in France, where anatomy dominates the course of study to the detriment of biology, which today is of much greater educational value, and infinitely more useful to the physician and even to the surgeon than formerly. Young men reared in these schools know the techniques of dosage which they themselves have practiced, know how to discuss problems of biological chemistry such as come up in clinical practice, basing their ideas on a solid physiological foundation. Our students cannot do the same, in spite of the efforts of excellent professors. But to tell the truth, they cannot be compared. In this domain as in others, the differences are too great, the organizations, the resources too dissimilar. There is no resemblance between these peerless Schools of Medicine and ours overwhelmed with such a superabundance of students. It is necessary to insist on this point: we are not here examining the totality of American Schools of Medicine which distribute their teachings to the mass of doctors, but it is to the problem of medical research that we particularly wish to draw attention.

The part reserved for original investigations in these American Medical Schools is great. It is not only the importance of the laboratories and their good equipment, their large resources, that should be emphasized. The spirit that animates this university corps and the type of life that is organized in these schools cannot be considered with too much attention. Each branch has its center of studies. With the senior professor are often associated pro-

fessors of research liberated from any other obligation but that of scientific work. Thus squads are formed. Work in squads, or "teams," and a common intellectual life are encouraged. Each worker makes an exhaustive study of one of the elements of the problem that has been proposed and brings to his coworkers the fruit of his findings and ideas. A fine spirit of solidarity between the members of the group, and of "fair play" toward neighboring groups, replaces the jealousies and bitterness often connected with individual work painfully pursued in isolation. There is nothing finer than this sporting attitude among these intellectuals. They, too, share in the taste for novelty, conspicuous throughout the country: an unusual case, a surprising conclusion attracts them; they desire above everything else to forge ahead, to win the race in pursuit of the unknown. The free intercourse, less formal and less hierarchic than in the Old World, of these men passionately interested in their task really gives the impression of an athletic team. One might almost say, pursuing the comparison, that their life is organized with a view to insuring the success of their side. The whole group spends its day in the hospital. This happy existence also known to young Frenchmen during their internship, where the day spent at the hospital permits continuous work, observation and study calmly pursued in a communal life of comradeship, the American members of the great Schools of Medicine enjoy throughout their entire lives.

The hospital attached to these medical schools is an integral part of the university, in the same way that laboratories, amphitheaters, lecture halls, institutes of research and rooms where the students work form part of the same corps of buildings. The School of Medicine is one mingled with the hospital and there is none of that duality from which we suffer in France. The fusion, material and moral, of the teaching staff with the research staff and hospital staff is total. When shall we arrive at this solution, the only logical and satisfying one? When will our staff of hospital doctors and surgeons have only one center of work and life? When will they, like their American colleagues, be able to continue, after a lunch taken in common—chiefs, assistants, interns —their scientific work, the supervision of their sick and their experiments, for the rest of the afternoon?

Such an existence encourages a vocation, gives a taste for serious research, patiently pursued, and permits reflection and study. These are just the qualities that develop among the American fellows in their Schools of Medicine, of whose scientific probity, simplicity and cordiality one cannot speak too highly.

Let no one think that the financial situation of medical men on the faculty of American universities resembles that of the great consultants among famous practicing physicians who enjoy a successful clientele. We could cite the case of one celebrated surgeon who operates on the children of magnates and multimillionaires throughout the entire world and who is content with his salary of full time surgeon. His life is simple and modest, but his name is famous for the originality of his work and the resounding progress which surgery owes to him in a domain up to now reputed to be inaccessible.

Naturally, this sort of organization favors, above everything else, excellent

care of the sick and of postoperative cases, no matter to what class of society they belong. All follow very nearly the same treatment. Thus is realized that "equalization from on top" that we have demanded for so long. At the same time progress in medicine is facilitated. It is certainly to organizations of this kind that we owe the magnificent contributions that American medicine has brought us in the course of the last years.

Would you like some examples? Neurosurgery, whose audacity has ceased to astonish us and to which so many head injuries, so many of those suffering from cerebral tumors, abscesses and intracranial hemorrhage owe their life, was developed in the United States; vitamin studies have been pushed to greater lengths, as have the chemical synthesis of hormones; ideas about blood factors which, in certain couples, may end in an incompatibility between the blood of the mother and that of the infant she carries; heart surgery which transforms into normal human beings unfortunate children formerly condemned to a terrible life and an early death; electroencephalography, which makes a tracing of the variations in currents running through the cerebral cortex; curing of the most severe anemias by liver extracts; exploration of the tracheobronchial tree by tracheobronchoscopy; the painstaking and delicate study of psychic and motor behavior of very little babies; the nursing care that permits the survival of premature and feeble infants; neonatal surgery which repairs in the first days after birth malformations incompatable with life; pathological physiology and surgical treatment of hypertension; the sodium salt treatment for suprarenal insufficiencies: all these advances are either discoveries made in America or American developments of foreign discoveries.

Without doubt many countries—and France among them—have brought and will continue to bring valuable contributions to the progress of medicine. Actually, progress in medicine is of two sorts: first, the sudden leap forward, which results from the imaginative genius of a physician or more exactly of a biologist capable of discovering new territory. But the spirit blows where it lists, and the best organizations in the world do not create genius, although the methods followed in the United States are such that if a worker has an original and important idea, he can test it, develop it and apply it as nowhere else. Today, the time has passed when a Claude Bernard, a Pasteur, working in the most modest of laboratories, could—with what willpower and with what treasures of ingenuity!—verify the hypotheses of his genius. A complicated and expensive apparatus has become necessary to even the greatest of investigators.

The other course in medical progress is slower and less spectacular; it proceeds from the daily work, often obscure, of numerous workers who apply themselves to the study of the sick. Both ways of advancing are equally indispensable. In the United States, the first is given every chance; the second, is organized to perfection.

Other characteristics of American medical research seem to us worthy of remark. We shall lay stress on only a few of them.

Foremost is the highly developed taste for instrumental apparatus. It is in essence bound up with technique in all the departments of which we have spoken; it is allied to the ingenuity frequently found among these intellectuals who are preoccupied with detail, painstaking in the care they give their sick, their wounded, their operative cases; allied also with the desire for perfection that the abundance of practical methods at each one's disposal can satisfy; and finally to the love of machinery common to all America.

Furthermore, this taste for apparatus is the liaison between science and industry. Well developed in Germany formerly, this alliance has taken on in the United States major importance. The exchange process is constant. American industry, so prodigiously extended, is on the lookout for scientific discoveries. American science, beneficiary of industry's gifts, can immediately apply, on a large scale, its own discoveries and those of others. When the great English biologists Alexander Fleming and, later, H. W. Florey and his fellow workers discovered penicillin, it was American industry that undertook to produce the new product, and the whole world today benefits from the large scale production of penicillin in America. It is true, that at the moment when the product of the laboratory was ready to be industrialized, London was being bombed and England menaced, so that this industry, which was then looked on as a war industry, had to be installed elsewhere. But my remark remains no less exact. And now, streptomycin, discovery child of the preceding drug, enters the therapeutic arsenal. Thanks to this drug, tubercular meningitis, which used always to kill in a few weeks, is now arrested for long periods, even cured, perhaps. American industry—in the United States and Canada—alone manufactures streptomycin.*

Another important particular in an entirely different department that today constitutes a characteristic of medicine and American medical investigation is the importance given to physiopathology of mental disorders. To be sure, American medicine does not pretend to have discovered the role of the emotions in the genesis of certain troubles, the action of the vegetative nervous system which regulates,—in silence in the normal man,—the functions of his viscera, the connection between the sensibility, sensations and psychic shocks, on the one hand, and our glandular secretions on the other, but it is applying itself to carrying these studies to their full yield, if one may say so. Studies of the many sorts of pains, of digestive or cardiac discomforts or of migraine or asthma, of certain types of obesity or emaciation are followed from a point of view which places the accent on the role of "psychosomatic" disturbances.

The newly discovered importance of such treatment and prevention of neuropathic troubles as can be begun and followed from infancy leads to the profound intervention of the medical specialist into education, school, family and social life. In this department, the American effort is very interesting. Remarkable studies have been made on the development of the newborn, of sucklings, of infants. The addition to pediatric hospital service of psychiatrists

*Since the publication of this paper, penicillin is being made in France, with streptomycin soon to follow.

who study children's characteristics and their reactions to their circle and to the outside world by simple but ingenious new methods, is the sort of progress that will bring further results in its wake. Nevertheless, the visitor—and, perhaps, above all, the French visitor—experiences a certain apprehension that in this direction America has gone a bit too far and, carried away by enthusiasm, may fall into excess.

Another tendency, which is by no means new, but which is increasingly emphasized, is that which has led American medicine in the direction of hygiene and preventive medicine. The American doctor has, perhaps, less "social conscience" than the French doctor, but rather more of what one might call "the hygienic spirit." Hygiene is more carefully taught there than with us and has a greater importance in the course of studies. Schools of Hygiene are adjuncts to medical schools or constitute important independent units. Certainly, in America as everywhere else, there is always a struggle to get a new method of vaccination generally accepted but, once recognized as good, it becomes widespread. Antidiphtheria and antityphoid vaccinations are increasing, to join vaccinations against whooping cough. Antitetanus vaccination, administered by the American army, gave excellent results: without doubt for the first time since men have fought on the surface of the earth, the wounded did not succumb to tetanus. But it is, above all, urban hygiene and, especially, problems of feeding and nutrition that are at the forefront: to the good quality of her milk, America owes part of the good health of her nursing infants. The results are worth the effort. Let us cite one: in New York, a city with a deplorable climate—sometimes frightfully hot, sometimes freezing, with a smoky atmosphere, where the housing of a part of the population is pretty poor, where in a small space 7 million inhabitants are piled up, many of whom are immigrants or poor and rather heedless Negro workmen, infant mortality is 2.8 per 100 instead of 6.5 as in Paris, a city with an excellent climate, with a less dense population, but where, it must be admitted, the housing problem is still serious, and where the problem of good milk for children has not been solved.

Are there no shadows in this picture? Certainly! But in order to know their form and extent, one would have to undertake a general survey of all the medical schools and hospitals scattered through the different states, of the professional practice of medicine and of the quality of the care that different categories of the population receive throughout the whole extent of that immense country.

Whatever might be the results of such a survey, it is no less certain that the American medical school, by the fine employment of its resources, by the disinterested zeal of its teachers and pupils, by the quality of its work, has the right to be placed today at the head of the medical schools of the world. It has achieved leadership. It merits it. In this field its national pride is legitimate, it has tried to spread its methods, its writings, its instruction and to draw to it doctors and students from the whole world, and, particularly, to dominate

the medicine of the New World by its spiritual influence on Canada, on Mexico and on the Republics of Central and South America, up till now faithful to our friendship and who ask that France should not forget them.

And we? Can we go on struggling? What is going to become of our French medicine in the battles of science and health in which she formerly engaged with such éclat and where she is still fighting the good fight? Can she hope still to sustain the glorious tradition which is hers?

First of all, we must point out that present day French medicine is little known in the American medical world; our publications, our books, are not read; our effort is ignored. American doctors feel themselves self sufficient. They still retain respectful memories of German and Austrian professors who dominated the preceding generation; they know the great names of French medicine of the past, they neglect French medicine of the present. So it happens that they concern themselves with a French discovery like B.C.G. twenty-five years after its publication by Calmette and his coworkers.

I will not speak of less important work which is almost never cited. Finally, everyone knows that in many American circles there exists, in regard to France, a sort of unfavorable prejudice somewhat comparable to that which reigned in England at the end of the Victorian era and which has now disappeared there. The average American who knows France only through the scandals broadcast in newspapers or through the reputation of Montmartre does not suspect the reality. In this connection our cultural attachés, our Direction des Relations culturelles are doing excellent work, about which the French public knows too little. We hope that our assistants can continue to profit by the French Government fellowships and by those generously granted by American foundations, so that the quality of our young French research workers will continue to make itself evident to their comrades in the United States. It goes without saying that they, on their part, have much to learn in the New World, ideas and techniques to acquire; in order to complete their medical education they take the best of what is taught over there.

But that is not all. It is necessary, also, to establish a current in the other direction and attract young Americans to us, to help them and to receive them as the young French doctors are helped and received in American schools. These young American doctors can, indeed, they also, enrich themselves by living in the Old World. There they may recover the spiritual source of their own culture, learning to appreciate a way of life and of thought with which they lack acquaintance and which has great value. Many professors in American universities feel the danger of an America that is intellectually isolated in the pride of its power; they know that facility is not always the best school and that it would be good for their young people to know what it is to work in the midst of material obstacles, and that a great tradition survives in old Europe and, especially, in France; their students could not fail to be intellectually enriched by coming to rediscover it. It is not enough for Americans to come to Europe as tourists or as soldiers. A collective life with our youth,

penetration into our scientific circles, contact with an old civilization should have on their young minds a happy and durable influence. We can complete the medical education of young Americans, if they come to learn from French doctors, disciplined, as, perhaps, no others are in the excellent gymnastics of the clinic; by the side of surgeons well trained in operative skill, and of research workers, more intuitive, perhaps, and with quicker minds than most.

For us, if there is a lesson that America teaches and that we should keep in mind, it is the method of organizing research. If it is true that we do not participate, as we should, in biological and medical progress, it is not only because our material resources are either mediocre or totally inadequate, it is, above all, because the organization of our work is deplorable. Every year numbers of young men ask nothing better than to dedicate themselves to research in biology and medicine, but conditions in our hospitals and universities are such that they are necessarily prevented from doing so, and are forced to take up the bread and butter practice of medicine. True, the National Institute of Hygiene has been able to distribute certain funds for medical research, notably for a corps of research workers whose income is assured. However important this progress may be—threatened, it is true, at every moment by a reduction of credits—it can only affect a handful of workers.

It is, therefore, a reform of the entire structure that is both urgent and necessary, and in this connection America is a model. We do not doubt that if this reform were realized France of today would take her place in medicine among the great.

THE MEDICAL CURRICULUM

It has been stated, and accurately so, that it is impossible to impart the entire contents of the medical and surgical science to the student. You cannot even impart the contents of any single subject in the curriculum. The most you can expect is to give the student a fair knowledge of the principles of the fundamental subjects in medicine and the power to use the instruments and the methods of his profession; the right attitude toward his patients and toward his fellow members in the profession; above all, to put him in the position to carry on his education, because his education is only begun in the medical school, and, therefore, our aim should be to enable him to complete his education, which goes through all the remainder of his life. (William H. Welch, Johns Hopkins University; 20th annual meeting of the Association of American Medical Colleges, March 21-22, 1910.)

The Role of the Teaching Hospital in Child Care
Demands in Pediatric Education*

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The interrelationship between medical service and the training of those who are giving it, has been the subject of an intensive study during the past three years by the American Academy of Pediatrics. As is now well known, this study is completed.[1] It has revealed much that has important bearing on the role of the teaching hospital in child care.

During our appraisal of pediatric education in medical schools and hospitals approved for pediatric residency, we have encountered all gradations of emphasis on service, on the one hand, and teaching on the other hand. We have seen a large beautifully equipped children's hospital where those in charge have maintained a firm policy that its facilities should not be made available for teaching—this, despite the fact that a nearby medical school had very few pediatric beds available for the teaching of its medical students. On the other hand, we see the situation in which an institution becomes so wrapped up in teaching and research that the care of the individual patient receives too little consideration.

Pediatric education may be considered as a three-phase process: undergraduate training for the medical student, graduate training for the hospital resident and intern, and postgraduate training for the physician thereafter.

Undergraduate education is, obviously, the primary responsibility of the medical school. The teaching hospital plays a supporting role in the undergraduate teaching program. But at the same time this supporting role is an essential one. Without ample clinical material available for the instruction of medical students, no pediatric department can conduct a satisfactory course. In our present discussion, however, we are more concerned with graduate and postgraduate training.

During the period of graduate education, the scene is reversed and the teaching hospital holds the center of the stage. The medical student is the proud possessor of an M.D. degree, but in actual fact, he has only just begun his practical training. The most important part of his preparation for practice is yet to come. As hospital intern or resident, he has opportunity to apply the knowledge gained during medical school years and begins to assume responsibility for patients under faculty supervision. It is the teaching hospital which serves as the training ground for the specialties. It is here that the new leaders in pediatrics are developed.

*Read at the eightieth anniversary celebration of the Children's Medical Center, Boston, May 7, 1949.

1. Child Health Services and Pediatric Education, by the Committee for the Study of Child Health Services of the American Academy of Pediatrics. *The Commonwealth Fund*, New York, N. Y.

In former years a physician could, and many did enter pediatrics through the door of general practice with little or no specialty training. Before 1933, there was no certifying board of pediatrics to prescribe the number of years of training that one should have before being considered a qualified pediatrician. It was a matter of individual inclination and—a matter of no little importance—one's financial ability to prolong the non-remunerative years of training. Now, however, we have the Board of Pediatrics which requires a minimum of two years of residency type training in an approved pediatric center.

The objective of graduate pediatric education is obviously to give the best possible training to the pediatrician-to-be. But just what do we mean by "the best possible training?" Trained for what? Are we more interested in turning out high powered investigators and professors or in preparing a physician for pediatric practice? This question has not been met squarely by pediatric educators.

It is the exceptional man who is destined to fill a professorial chair or devote his life to pediatric research. Such individuals will, in any event, continue their training for more than the required two years. For the great majority of pediatric residents these two years of hospital experience will be all the formal training that they will ever have. Is the resident training program as well suited as it should be to prepare an individual for general practice of pediatrics?

For an answer to this question, we should look rather closely at the nature of pediatric practice for which preparation is being made. During the course of the Academy's study, particular attention was given to an analysis of the pediatrician's average day's work. In particular, we wanted to know the proportion of time given to health supervision of well children in comparison with medical care of sick children.

Not so many years ago the physician's time was taken up in the care of children afflicted with diseases that have now largely disappeared, such as diphtheria, typhoid fever and the cholera infantum of summer months, to mention only a few. As these diseases have diminished in frequency and severity, more time has been given to protection of health and less to the care of the sick.

From the daily record which all pediatricians throughout the country kept for a four week period, we have shown that more than one-half, 54 per cent, of pediatric practice is health supervision and preventive medicine.

In the teaching hospital most, if not just about all the emphasis is placed on diagnosis and treatment of disease; the rarer and more obscure the case, the more interest it arouses. Well baby clinics are less exciting and they take relatively little of the resident's time or attention. Experience with normal newborn infants was conspicuously deficient in pediatric residency training.

It is obvious that the 54 per cent of pediatric practice concerned with the preventive and public health aspects cannot in any sense be taken as a precise

guide for a comparable allocation of the resident's daily schedule. Routine immunizations and regulation of feeding take little time in the learning, although a lot of time in the doing. Knowledge of the fine points of an obscure differential diagnosis or the skillful use of our therapeutic armamentarium can not be acquired so easily. These aspects must necessarily continue to be dominant elements of a successful graduate experience. Although difficult diagnostic problems may be relatively infrequent in the usual pediatric practice, the ability to handle them when they do occur will in large measure determine the physician's professional standing.

At the same time, it is clear, from an analysis of present day practice and from our study of residency training programs, that more attention should be given to bringing the pediatric resident closer to the actualities of pediatric practice. He should be prepared to meet the problems presented to him by a mother with her newborn infant; he should be thoroughly familiar with the characteristics of normal growth and development; and he should have had at least an introduction to the services rendered by community health agencies.

So far we have been discussing the training of the pediatrician. The responsibility of a pediatric teaching hospital does not stop there. Not only is pediatric education concerned with the training of pediatricians, but also it is, or should be, concerned with bringing to the physician training for general practice or preparing for other specialties, some training in the medical care and health supervision of children.

Important as we, who are pediatricians, may think ourselves, and great as is our responsibility for the children of the nation, we play a comparatively small role. It is the general practitioner who cares for 75 per cent of children in comparison with 11 per cent attributable to pediatricians and 14 per cent to other specialists.

In these days of increasing specialization and increasing emphasis being placed on certification granted by specialty boards, it is well to take full note of this fact that three-quarters of the care of children is in the hands of the general practitioner. "He has supposedly gone out of business," wrote Dr. Harvey Cushing some years ago,[2] "pinched on one side by the public health officer and periodic life extension examiners, and on the other side by what are called the scientific doctors, including ourselves, the specialists in our respective hospitals. He has long been so far forgotten he should by this time be an extinct species. Indeed, it is authoritatively said that the automobile and the associated highways, together with the present setup of society, have driven out the unmethodical, silk hatted, bewhiskered, lovable and friendly general practitioner."

Dr. Cushing made this statement more than fifteen years ago. Since then there has been increasing momentum in the trend toward specialization. But, far from being extinct, the general practitioner is alive and thriving.

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2. Cushing, Harvey, Medicine at the Crossroads, *J. A. M. A.*, 100:1570 (May 20), 1933.

If, then, the well being and the lives of the children in the community are so largely in the hands of the family physician, the amount of graduate pediatric education which these family physicians have had is a matter of obvious importance.

One of the most revealing findings of the study is the limited amount of hospital training physicians have had before entering practice. A surprisingly large number have had to learn the hard way after they have been out on their own.

The information obtained directly from the questionnaires returned by the general practitioners indicated that approximately 17 per cent of them had received no hospital training at all following graduation from medical school, and an additional 4 per cent had received less than one year. Thus, 21 per cent of the general practitioners had had less than a year of intern experience.

If one looks at this situation more closely, it appears that 46 per cent of this group who had received less than a year of hospital training were over 65 years of age. It may be assumed, therefore, that these physicians received their medical training in earlier years before hospital internship was as generally required or available as at the present time.

The study has also shown that general practitioners in rural areas are, as a group, older than those in metropolitan areas. It follows, therefore, that the proportion of physicians with little or no hospital training is greater in the isolated counties than in the metropolitan counties. In other words, the general practitioners in the isolated areas tend to be an older group who have had less basic hospital training before entering practice.

In addition to this information on general internship, data were obtained specifically for the amount of training in the field of pediatrics. To what extent had general practitioners been trained in the medical care and health supervision of children before starting practice? To answer this question, we asked all physicians to record the number of weeks spent on a pediatric service during hospital internship or residency. About half of the general practitioners had received less than one month of pediatric training during their hospital internship, or had no pediatric service at all.

It is no easy matter for a pediatric service to make room for an intern who is training not for pediatrics but for general practice. In the few months that the rotating intern is on service, he has barely enough time to become sufficiently familiar with the service to be of real use. He is then replaced by his successor. However, it appears very obvious that if a pediatric teaching center such as this is to accept and fulfill responsibility for the pediatric education of those who are to take care of most of the children, namely the general practitioners, increased opportunity must be made available for rotating internships for those in training for general practice.

After he finishes his hospital appointment, the physician must make a tremendous and sometimes overwhelming effort to keep abreast of the rapid

advances in his profession. This is particularly true of the general practitioners who do not have frequent contact with medical centers, hospitals, clinics and staff discussions. The need which these physicians feel for an opportunity to acquire the latest knowledge and new therapeutic skills is shown clearly by the growing popularity of postgraduate seminars. Postgraduate courses in general medicine and its many specialties are increasing rapidly in number, but are still not able to accommodate all those who apply.

It is in this phase of pediatric education, the postgraduate, that there lies an outstanding challenge for leadership. Postgraduate education is less well established than undergraduate or graduate training; it has developed as need and circumstances have indicated: like Topsy, it "has just growed."

Postgraduate education may be achieved in several ways. There are the many seminars and courses which vary in length from a day or two to nine months or a year or sometimes even longer. Certain of these seminars offer a general review of medicine, others are limited to a special subject. A few in the field of pediatrics extend throughout an academic year and are recognized by the Board of Pediatrics as equivalent to one year of pediatric residency.

A conspicuous and significant trend discernible in a number of areas throughout the country today is the development of programs to decentralize medical education and to bring to outlying and remote areas the up-to-date knowledge and skills of the medical center. The extension type of postgraduate teaching has gained great popularity. This may be characterized as the "circuit rider" program in which teachers go out from the medical schools and teaching hospitals to hold lectures for those physicians who have the inclination and time to attend. This latter is of well established value, although an intermittent shot-in-the-arm stimulation, and has been well received by practicing physicians who are unable for one reason or another to attend a longer course in the medical center.

There is a more effective method of postgraduate education which at the same time strengthens the graduate training and brings with it direct improvement of medical care. I refer to the system in which a pediatric resident from a teaching hospital rotates through periods of service in suitably qualified outlying hospitals which become affiliated with the teaching center. Many advantages can be gained by properly guided experience of two to three months in an outlying community hospital. There, the resident learns more of the type of situation which will confront him when soon he is out on his own. There, he assumes greater responsibility for the hospital care of children who are the patients of general practitioners. There, he learns by the preceptor method the art of practice. There, he discovers the family physician as a real person, faced with diagnostic problems not readily appreciated by one who is habitually surrounded by technicians and laboratories. There, too, he should have opportunity to enter into community health activities, well-child conferences, mental hygiene clinics, school health services and other activities which, as we have shown above, are to constitute a large part of his daily

work. While adding to his knowledge and experience, the resident brings to the general practitioners and hence to their patients the skills and techniques of the teaching center. The general practitioner in the outlying areas is then on the receiving end of a direct channel from the medical center; and the child, even in remote and isolated areas, receives better medical care and health supervision.

There are pitfalls and dangers in these plans, which, if kept in mind, can be avoided. One danger is that the training of the resident may be sacrificed in the desire to benefit the outlying affiliated hospital and the children it serves. To avoid exploitation of the resident, care must be taken to assure that the affiliated hospital has a pediatric service of adequate size and quality; that there is a senior pediatrician of high standing responsible for the supervision of the resident; and that the period of rotation does not consume an undue portion of residents' appointment. In situations where proper controls have been established, I have been much impressed by the fact that the residents who have had such experience and with whom I have discussed the matter, have, without exception, said that their service on rotation was a valuable addition to their training.

Decentralization of pediatric education and services, as described here, is receiving primary attention in the planning of the American Academy of Pediatrics Committee for the Improvement of Child Health, for here we see the basis for a stronger and broader program of pediatric teaching which brings with it better and more evenly distributed health for children.

JOURNAL
OF THE
Association *of* American Medical Colleges

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NOTICE OF REMOVAL

On and after October 1, 1949, the address of the Association of American Medical Colleges and of the Journal of the Association will be 185 North Wabash Avenue, Chicago 1, Illinois.

The Sixtieth Annual Meeting

The 60th annual meeting of the Association, held November 7-9 in Colorado Springs, differed from previous meetings in that it was built around discussion groups rather than around formal papers.

President Virgil Hancher opened the meeting Monday morning with a stimulating and forthright address on "The Social Responsibilities of Medicine." The participants then broke up into three groups—one attending the Round-table on Student Selection Problems, another attending the Round-table on Leadership in Curriculum Planning, the third attending the Round-table on Making the Internship a Planned Educational Experience. The afternoon continued the round-table discussions with the shift of each group to another round-table.

At the Association Dinner on Monday evening the conference was welcomed to Colorado by President Robert L. Stearns and entertained by the Koshare Indian Dancers (Troop No. 230 of the Boy Scouts of America).

President J. Roscoe Miller delivered a stirring presidential address at 9:30 Tuesday morning and was followed by Dr. Charles Austin Doan with a talk on "Education in Diseases of the Chest." The final round-table discussions occupied the remainder of the morning.

At the Tuesday afternoon Executive Session, all committee reports were heard, the business of the Association was done and Dr. Fuller Albright was named as recipient of the Borden Award for 1949. The following officers for the coming year were elected: President, Dr. Joseph Hinsey; Vice-President, Dr. Franklin D. Murphy; President-elect, Dr. Arthur C. Bachmeyer; Secretary, Dr. Dean F. Smiley; Treasurer, Dr. John B. Youmans; members of Executive Council, Dr. George Packer Berry, Dr. Walter A. Bloedorn, Dr. Ward Darley and Dr. Vernon W. Lippard. The time for the 1950 meeting was set for October 23-24-25 and the place, the Lake Placid Club, Essex County, New York.

At the Tuesday evening dinner, Dr. Willard Rappleye made a dispassionate but very illuminating report on medical education as it has been affected by the specialization of medicine in England. This was followed by an interesting program arranged by Dr. David S. Ruhe to show good examples of the different types of films useful in medical teaching.

Wednesday morning was devoted to reports from the chairmen of the three round-tables.

Major actions stemming from the Conference were: Revision of the Constitution to provide for affiliate memmerships; establishment of a Committee on Public Information and an Editorial

Board; the restoration of Hahnemann Medical College and the University of South Dakota School of Basic Medical Science to full membership in the Association; the election of the University of Washington School of Medicine to membership.

Registration included 249 delegates and 41 ladies. Every medical college in the United States but one was represented. Two Canadian schools were represented.

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Medical Education in Review

The Journal of the American Medical Association, September, 1949, presents the annual review or study of data pertaining to medical schools made by the Council on Medical Education and Hospitals. So much interesting and worth while information is given that it is not possible, in the limited space which can be allotted here, to cover the whole study. Every one interested in medical education should read the report in its entirety. It is well worth while to do so. We must content ourselves with making mention of what we believe to be some of the essential items of interest to Journal readers.

Seventy-eight schools are included in the study. One, the University of Washington School of Medicine, now entering on the fourth year of its existence, is not included in the study. Therefore, only 31 state owned schools figure in the study. Next year, there will still be 31 state owned schools inasmuch as the Southwestern Medical School of Dallas, Texas, has recently been taken over by the State of Texas as a second state owned school. There are, also, two state owned medical schools in Virginia, only one, however, being a part of the state university. Three schools are owned by municipalities, although one of these, Louisville, receives only a part of its financial support from the City of Louisville. The Cincinnati school is a part of the University of Cincinnati. Wayne is a part of the City of Detroit Board of Education of which Wayne University is also a part.

Eleven of the forty-eight states do not have a medical school. Several of these states are considering the establishment of a medical school. One state has voted to establish a school in connection with the state university (Florida) but has not yet made any appropriation to do so. New Jersey has appointed a committee to consider the establishment of a medical school. Several other states have toyed with the idea but nothing material or definite has developed thus far. Seven of the state owned medical schools offer only the first two years of the medical curriculum. Six of these schools are considering adding the third and fourth years.

Of the 31 publicly owned schools, 17 did not last year admit any out of state students. One of these is a municipally owned school (Wayne); another (Pittsburgh) is an endowed or privately owned school. These 17 schools admitted 1,098 freshmen or 16.3 per cent of all freshmen admitted. This is a matter now being discussed with more or less vehemence: Should a state owned medical school restrict its student body to residents of the state or should it also admit students from other states? The question is still being debated. Some say "yes;" some say "no."

It is interesting to note that more women are studying medicine now than in years past. Of the total number of students in all four years, 2,109, or 8.9 per cent, were women. Slowly the women studying medicine increased in number, from 592 in 1915 to 2,109 in 1948-1949. In 1915, 92 women graduated, or 2.6 per cent of all graduates. In 1949, 612 women graduated, or 12.1 per cent of all graduates.

Whether or not the internship should be made a requirement for graduation is still an unsettled question. At one time, 15 schools had the requirement. Today, only 7 schools have it. Twenty-four states and 6 territories and possessions and the District of Columbia require an internship for licensure. The objection to demanding the requirement has always been that the intern year is

more of a service year than an educational year. It is not the equivalent of a year spent in a university and it is not under the control or supervision of a medical school. Some schools requiring the year for graduation did have, and may still have, a fee (enrollment or tuition?), small in amount, however, for that year.

A most interesting and informative section of the study is that dealing with finances. Finances have for several years loomed large on the horizon of medical education. The question—and it is debated with much animation—is: Do medical schools need additional income derived from other than the usual sources — appropriations, endowments, gifts, etc.—or must they be given federal support? For fifty years—perhaps more; perhaps, less — medical schools have not been able to operate on fees received by students. In a study made in 1926, it was shown that students contributed only about one-third of the cost of operation. Medical schools were compelled to find additional funds elsewhere. The total budgets of all medical schools in 1926 was $12,000,000. In 1934, they totalled $23,500,000; in 1949, $61,000,000. Student fees still contribute only about one-fourth of that amount. Increase in size of the budget has also called for an increase in student fees. In 1893, the highest tuition fee was $200. Today the maximum is $830. However, a few schools, always state owned schools, still have a low tuition fee, although there is a differential fee for nonresidents. The median fee for residents is about $575; nonresidents pay from $78 to $400 more. In no instance do tuition fees cover the budget.

How much do medical schools spend per student per year? Ten schools spend less than $1,500 per student; 52 schools spend $2,000 or more; 27 schools spend $3,000 or more; 5 schools spend more than $5,000 per student! It must be evident to all thinking persons that this state of affairs cannot go on much longer. From some source medical schools must be given financial aid. It is true, that states are in better state financially than they have been for many years, but medical education is not the only item in the economical setup of a state which needs to be supported. Perhaps the prosperity of the states may not be a continuing one. They may again become poor financially and not be in a position to give needed support to all the activities in which a state is engaged. Returns from endowments have decreased. Private philanthropy is not as generous as it has been in years past. Nevertheless, it is in better position to give support than any other agency. Medical education is an expensive proposition. That it should and must be supported adequately no one will gainsay. The state of the Nation, the health of the people deserves and demands the best possible medical care. Everything that is good is costly—even automobiles and deep freezers and these are not comparable in any way with good medical care. Good doctors are a necessity, as much so as air, food and water. Then, why not support every undertaking which is only concerned with good health and the prevention and cure of disease? That is a matter to which every one, especially the layman, should give serious thought and come to the rescue of financially harrassed medical schools.

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American Medical College Association

The thought to organize medical colleges to make a common advance in the standard of requirements for the study of medicine originated in the mind of Dr. J. M. Bodine, dean and professor of anatomy in the medical department of the University of Louisville. In 1876, Dr. Bodine sent out an invitation to all medical colleges to meet for the discussion of this matter in Philadelphia, June 2, 1876, at the Jefferson Medical College. Thus, to Dr. Bodine must go the credit of bringing together the medical colleges for the purpose of discussing problems of mutual interest in the field of medical education and teaching.

In 1877, the constitution adopted

stated that "the objects of this Association shall be the advancement of medical education and the establishment of a common policy among medical colleges in the more important matters of college management." The articles of confederation contain provisions as to the medical curriculum which were a distinct step in advance of the practice of most colleges at that time. Dr. Bodine proposed a resolution, which was adopted, which embodied the hope of inducing students to prolong and systematize their studies by recommending to the colleges to offer, without extra cost, the option of three courses of lectures, graded in character, in lieu of two repetitional years.

It is certain that some of the credit of the marked progress in medical education belongs to the pioneers of 1876, especially to men like Dr. Bodine, N. S. Davis, J. B. Biddle and many others whose names could be mentioned but whose efforts to improve medical education and teaching have been forgotten by their successors in the field.

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Elective System in Medical Education

At the 10th annual meeting of the Association of American Medical Colleges, held in Columbus, Ohio, June 5, 1899, Dr. John M. Dodson, Junior Dean of Rush Medical College, Chicago, read a paper titled as above. This paper is worthy of careful reading as are many papers which have been read at annual meetings of the Association. Unfortunately, comparatively few medical educators have interested themselves in the thoughts expressed by those who have disappeared from the scene but who have, nevertheless, exerted much influence on pedagogy in medicine. A reading of the thoughts expressed by these men is convincing of two facts: First, that their thinking was far ahead of their time. Second, that what they said fifty years ago has barely scratched the surface of thinking of present day teachers and educators.

Dr. Dodson in his discussion of the elective system summarizes his paper as follows:

1.—The elective system is one of the greatest advances which has yet been made in educational methods. 2.—It is one of the two improvements in pedagogic science which has not yet been adopted by medical colleges. 3.—The election is not necessarily confined to choice of subject, but pertains also to choice of teacher and method of study. 4.—The elective system possesses great advantages for both student and teacher, especially in the difference in spirit which animate both. 5.—It is readily adaptable to the medical curricula under certain restrictions and limitations, and ought to be promptly introduced into our medical colleges.

This was said fifty years ago. How many medical colleges have given thought to an elective system? Very few, if any. The curriculum is still rigid and regimented. The student is not considered in the setup of a curriculum. Teaching is still being done much as it has been for more than fifty years. Lectures still hold full sway. Why? Is lecturing teaching? Definitely not. It is an easy way to hold forth. Good pedagogy does not support lectures. What has become of the definition of what constitutes a university? "A log, with the student on one end and Mark Hopkins on the other!" The moving belt in medical education has been in use far too long. Medical teachers should give serious thought to good methods of teaching, to sound pedagogy. Would that we had a school of medical pedagogy in place of an "urge" to teach based on nothing but the "urge." (This report was approved and accepted at the 1900 annual meeting.)

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William Sargent Ladd

William Sargent Ladd, professor of clinical medicine and former dean of Cornell University Medical College, died in New York City September 17, 1949, at the age of 62. A graduate of Amherst and the College of Physicians

and Surgeons, Columbia University, he was appointed associate dean in 1931 and became dean four years later. This post he resigned in 1942 because of ill health. Dr. Ladd was attending physician at the New York Hospital and a consultant to the Nassau Hospital Association; a director of the Seaboard Surety Company; a trustee of the New York Academy of Medicine, a member of the Board of Managers of Memorial Hospital and a former trustee of Amherst College and of the American University of Beirut; a past president of the American Alpine Club and an honorary member of the French Alpine Club of Paris; a member of Alpha Omega, Alpha Delta Phi and many professional societies.

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Fellowships, Funds and Prizes

The third edition of the pamphlet titled "Fellowships, Funds and Prizes Available for Graduate Medical Work in the United States and Canada, may now be purchased for $1.00 per copy from the Association of American Medical Colleges, 185 North Wabash Avenue, Chicago 1, Illinois.

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Medical Schools and State Boards of Medical Examiners

Following is an extract from the President's Address of Dr. Eli H. Long (1908-1909), University of Buffalo Medical Department, read at the 19th annual meeting of the Association of American Medical Colleges held in New York, March 15-16, 1909.

". . . it would be unfair to regard the schools as having been wholly backward, or even passive, in the movement for better control of the practice of medicine. There is evidence to the contrary. Forty-five years ago, when the profession in New York State was thinking in this direction, as the records of the state medical society show, or twenty-six years before the passage of our modern medical practice act, one of the medical schools of the state, by unanimous vote of the faculty, promulgated the following resolutions:

University of Buffalo
Medical Department

Feb. 20, 1864.

On motion of Professor Charles A. Lee, seconded by Professor James P. White, it was

Resolved, That the Medical Society of the State of New York be requested to appoint a committee to consider the expediency of, and to report a plan for, the appointment of a state board of examiners for the degree of doctor of medicine, and to report at the next annual meeting of the society.

Resolved, That the same committee be instructed to bring the subject before the next meeting of the American Medical Association, and that the delegates of this society be instructed to urge the general adoption of the same plan in other states of the Union.

Sanford Eastman, Dean.
Thos. F. Rochester, Chairman.

The progress made in this direction within thirty years has been such that now every state in the Union has its medical practice act and its examining and licensing board."

OTOLARYNGOLOGY RESIDENCY immediately available. Fully approved New York City Hospital. Room, board, uniforms, laundry provided. Opportunity, basic science work leading to Master's Degree. Address Journal Association American Medical Colleges.

College News

University of Texas
Medical Branch

Appointments: Marcella Frantz, Ph. D., assistant professor of anatomy; John G. Bieri, Ph.D., assistant professor of biochemistry and nutrition; Edith Darrow, Ph.D., assistant professor of bacteriology and parasitology; Austin Foster, Ph.D., assistant professor of neuropsychiatry, in charge of clinical psychology; Dr. C. C. Morris, assistant professor of pediatrics, and Dr. E. B. Ritchie, associate professor of dermatology and syphilology.

A special course of seminar discussions on the history of psychiatry has been organized by Dr. Ivan Bruce, assistant director of the State Psychopathic Hospital.

Dr. Margaret Hardy of the Strangeways Laboratory, Cambridge, England, an authority on tissue culture studies on the histochemistry of skin and hair, will be a guest research worker in the Tissue Culture Laboratory in January, 1950.

The Sealy and Smith Foundation has built and furnished four apartment buildings containing eighty units, for the accommodation of staff members of the Medical Branch.

The eleventh semi-annual postgraduate conference on pediatrics will be held November 7 to 11, in cooperation with the Division of Maternal and Child Health of the Texas State Department of Health.

Hoffman-LaRoche, Inc., have given a grant of $4,500, to be used for the support of research in the Tissue Culture Laboratory under the direction of Charles M. Pomerat, Ph.D.

The Lilly Research Laboratories of Indianapolis have made a grant of $2,500, to support studies on the localization of antibiotic reaction under the direction of Dr. Ludwik Anigstein in the Laboratory for Rickettsial Research.

Wilbur A. Selle, Ph.D., professor of physiology and director of the Laboratory of Medical Physics, has been appointed consultant in physiology in the Laboratory for Nuclear Studies, Oak Ridge, Tennessee. Mario Gaudiano, assistant professor of physiology, has been granted a leave of absence for research and special studies in the Physiology Laboratories of the University of Buenos Aires. Morris Pollard, D.V.M., director of the Virus Research Laboratory, has been granted a nine months leave of absence to accept a special grant from the National Foundation for Infantile Paralysis for research study on viruses at the Hooper Foundation for Medical Research at the University of California Medical Center, San Francisco. The U. S. Public Health Service has made a grant of $8,500 to support the studies of Wendell Gingrich, director of the Malaria Research Laboratory on the chemotherapy of malaria.

The National Advisory Health Council of the U. S. Public Health Service has made a grant of (1) $4,600, to support the work of Dr. J. Allen Scott on immunity to filarial infection; (2) a grant of $8,000, to support the studies of Dr. C. M. Pomerat, director of the Tissue Culture Laboratory on nutrition of brain tissue; (3) a grant of $5,400, to support research under the direction of Dr. C. A. Nau, professor of preventive medicine, on the effects of repeated exposure to minimal quantities of arsine gas.

The U. S. Public Health Service has made a grant (1) of $5,400 to support the studies of Dr. Edgar J. Poth, professor of surgery and director of the Surgical Research Laboratory, on the role of the pancreas in peptic ulcer formation; (2) $7,100 to support the studies of Dr. C. H. Connell, associate professor of preventive medicine, on the

effect of temperature and acidity on the reactions of chlorine with amino groups encountered in sewage.

Irwin, Neisler and Company of Illinois have made a grant of $1,000, to support studies of Dr. Arthur Ruskin, associate professor of internal medicine, on the therapy of essential hypertension.

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New York University-Bellevue Medical Center

Dr. Charles Fore Wilkinson, Jr., associate director of the Kellogg Foundation's Division of Medicine and assistant professor of medicine at the University of Michigan Medical School, has been appointed professor and chairman of the Department of Medicine at the Post-Graduate Medical School, New York University-Bellevue Medical Center. Dr. Wilkinson will be director, Fourth Medical Division, Bellevue Hospital, and also director of the Department of Medicine at University Hospital, 303 East 20th Street. Dr. William S. Tillett remains as professor and chairman of the Department of Medicine in the College of Medicine and director of the Third Medical Division, Bellevue Hospital. New York University is staffing two of the four divisions of Bellevue Hospital. The Third Division of the hospital has been associated with the College of Medicine for more than 100 years but, until recently, the Fourth Division had been classified as of the "open" variety. The Fourth Surgical Division is directed by Dr. J. William Hinton, professor of surgery at the Post-Graduate Medical School and the Third Surgical Division by Dr. John H. Mulholland, professor of surgery, in the College of Medicine.

A grant of $485,000 by the National Heart Institute for heart research will be devoted to the construction of projected facilities for the Center's Institute of Cardiovascularrenal Disease. Completion of new facilities for the Institute, which are estimated to cost in excess of $1,000,000, will make possible an expansion of an already broad program of research aimed at the discovery of the causes of heart disease. The Institute's new facilities are a part of the $32,000,000 development program being carried forward by the New York University-Bellevue Medical Center. In addition to the grant for construction purposes, the National Heart Institute made two other grants to members of the faculty: A grant of $14,000 for teaching in cardiovascular diseases to be administered under the direction of Dr. Homer Smith; a grant of $2,500 for equipment to be used in a research project at Goldwater Memorial Hospital by Dr. Henry K. Taylor of the university faculty. The equipment will be of value in angiocardiographic examinations for the recognition and detection of congenital and acquired cardiac lesions and anomalies of the large blood vessels.

Dr. Robert Berliner is dean of the Post-Graduate Medical School.

Appointments: Dr. Alson E. Braley as professor and chairman of the Department of Ophthalmology, Post-Graduate Medical School; Dr. Robert S. Hotchkiss as professor and chairman of the Department of Urology, Post-Graduate Medical School; Dr. Harry Most, professor of preventive medicine in charge of the tropical medicine program; Dr. Robert Ward, professor of pediatrics, to direct research studies on poliomyelitis.

The Medical Center's new Post-Graduate Medical School embarked on its first full academic year, located in its new offices adjacent to the College of Medicine in the building at Twenty-eighth Street and First Avenue. The Post-Graduate Medical School is the result of the consolidation of the former New York Post-Graduate Medical School, founded in 1872, and the Post-graduate Division of New York University College of Medicine, originated in 1914.

For this academic year, the school's program has been greatly expanded through the generosity of the Samuel H. Kress Foundation's gift of over $8,000,000 for the support of a broad program

of postgraduate medical education. An initial allotment of $400,000 of this grant will be expended during the current academic year, enabling the school to make important changes in its faculty and expand its program of teaching and research. In all, the teaching and research program will undergo more than twofold expansion compared to that of last year.

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University of Cincinnati
College of Medicine

The University of Cincinnati has recently completed or has under construction a program of development in the College of Medicine and the University Hospitals group which will total about $3,250,000. A floor has been added to both Pavilions J and N of the Cincinnati General Hospital, at a cost of $225,000, providing additional facilities for the department of psychiatry on Pavilion N and for internal medicine on Pavilion J. The new floor on Pavilion J contains additional departmental offices and research laboratories, and also a library and conference room for the staff of the department of internal medicine. Pavilion N is the psychiatry unit of the Cincinnati General Hospital, and the recent addition will provide offices for the university staff in psychiatry, conference rooms and a departmental library. There is also a very modern, compact unit which will be used entirely for the study of psychosomatic problems. This will accommodate sixteen patients.

The new Mont Reid Memorial Pavilion, named in honor of the late Dr. Mont R. Reid, professor of surgery in the University of Cincinnati and director of surgery in the Cincinnati General Hospital, is now well on the way to completion. It is a six-story pavilion placed in the exact center of the Cincinnati General Hospital group. When completed, the first floor will house the laboratories and offices of the departments of neurosurgery and neurology, the gastric research laboratory, an extensive addition to the department of radiology devoted primarily to therapy, and two additional classrooms. The second floor will be devoted entirely to laboratories of bacteriology and immunology. The third floor will house ten additional operating rooms for the department of surgery and will be integrated into the present operating pavilion by a direct throughway. Chemical, hematology and physiology laboratories will be housed on the fourth floor. The two top floors will provide modern dormitory facilities for the housing of the resident staff, thus decompressing the overcrowded residents' quarters in the Administration Building of the hospital. The cost of the Mont Reid Pavilion will be $2,000,000.

A new Emergency Ward is being erected at the Goodman Street entrance of the hospital at a cost of about $350,000. In addition, approximately $150,000 is being spent in modernizing existing units in the hospital.

A $500,000 addition to the Kettering Laboratory was completed in August, which more than doubles the size of the original building. With the completion of this laboratory, a more intimate integration of the Kettering into the Medical School will be effected. Until now the Kettering Laboratory has been an ancillary unit in the College of Medicine, devoting its facilities almost entirely to problems of industrial physiology. It has not been used effectively in the teaching of students at either the undergraduate or the graduate level. The recent addition will provide ample facilities for the training of undergraduates and graduates. The Kettering Laboratory has been brought into the Medical School as the department of preventive medicine and industrial health, thus combining facilities of the department of preventive medicine with those in the Kettering to develop an unusually strong university unit. Dr. Robert Kehoe, for many years the director of the Kettering Laboratory, will be professor of industrial health and head of the department, and Dr. John J. Phair, formerly of Johns Hopkins Medical School and later health commis-

sioner of the City of Louisville and professor of preventive medicine in the University of Louisville, has been appointed professor of preventive medicine in the new department, replacing the late Dr. T. J. LeBlanc.

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State University of Iowa

A Radiation Research Laboratory has been established. It will be under the direction of Dr. T. S. Evans, formerly of the College of Physicians and Surgeons, Columbia University. The activities will be administered by a committee consisting of Dr. Evans, Dr. Hines of the department of physiology and Dr. Kerr of the department of radiology. Biology is represented by Dr. Evans; physics by Dr. C. D. Janney and biochemistry by Dr. T. Winnick; clinical work by Dr. H. B. Elkins of the radiology department. Radiation research will consist of studies in the biological effects of ionizing radiation and the use of radioisotopes in physiological, biological and clinical studies.

Grants: Nutrition Foundation, Inc., $3,000 annually for 3 years for support of work under Dr. Jeans on effects of prenatal vitamin K deficiency in the mother on the infant; a two year grant of $3,000 for study of biotin and pantothenic acid in metabolic processes by Dr. George Kalnitsky; American Cancer Society, $35,000 to Radiation Research Laboratory; U. S. Public Health Service, $24,000 to the departments of obstetrics-gynecology and radiology for study of cancer; Hoffman-LaRoche, Inc., $10,000 for study of effect of drugs on cerebral blood vessels; Bristol Myers Company, $2,000 for study of salicylates; E. L. Patch Pharmaceutical Company, to study absorption and excretion of mineral oil. Department of Physiology received $18,000 to continue study of altered breakfast habits on physiological function; U. S. Public Health Service, $18,000 to support studies on human hypogonadism, protein bound iodine in relation to thyroid function; effect of quinine on bacterial metabolism, study of steroid compounds and study of psychopathology of schizophrenia and depression.

The curriculum committee of the faculty recommended certain changes in the curriculum which will be placed in operation on an experimental basis for the academic year 1949-1950. These changes increase the time devoted to internal medicine and psychiatry during the clinical years with a reduction in time devoted to some of the surgical specialties. There will also be a reduction in the total number of didactic lectures and an increase in joint conferences and symposia. This will provide more individual instruction and supervision of the medical student. Part of the didactic teaching in pathology has been in the junior year. This is being placed in the sophomore year. A course in psychiatry in the second year is being expanded to cover normal human development and the declining years with an emphasis on psychosomatic relations. Guiding concepts in these changes have been those of training for general practice and the integration of medicine.

Appointments: Dr. W. W. Morris, assistant dean; Dr. Lucien E. Morris, assistant professor of surgery in anesthesia; Dr. George E. Perret, assistant professor of surgery in neurosurgery; Dr. Theodore Winnick, research associate professor of biochemistry. Dr. J. R. Porter, professor of bacteriology, will succeed Dr. Wm. H. Hale as head of the department. Dr. Hale has resigned.

Promotions: Dr. Russel Meyers and Dr. Robert T. Tidrick, professor of surgery; Dr. Irving H. Borts, associate professor of hygiene and preventive medicine; Dr. Raymond G. Bunge, associate professor of urology; Dr. Robert M. Featherstone, associate professor of pharmacology; Dr. Edgar S. Brintnall, Dr. Johann L. Ehrenhaft and Dr. Sidney E. Ziffren, assistant professor of surgery; Dr. Stephen A. Forbes, assistant professor of radiology; Dr. J. D. Thomson, assistant professor of physiology; Dr. F. W. Schueler, assistant pro-

fessor of pharmacology; Gilbert Kelso, assistant professor of hygiene and preventive medicine; Marguerite McDonald, assistant professor of occupational therapy.

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New York Medical College

A bequest of $500,000, to be used as a special endowment for the division of surgery, establishes the Valentine Professorship of Surgery. Dr. James M. Winfield, professor of surgery and director of the department of surgery, has been named to that professorship.

The charter of the New York Medical College has been amended on recommendation of the Board of Regents of the State of New York so that in addition to the degrees of Doctor of Medicine, Master of Medical Science and Doctor of Medical Science, Bachelor of Science degrees in specified fields may be granted to qualified students, and honorary degrees of Doctor of Science and Doctor of Humane Letters may be conferred by the college.

A bequest of $240,000 from the late William Nelson Cromwell is announced. The Morrisania City Hospital became an affiliate of the Medical College last spring and the Seton Hospital has just entered the group of college affiliates. This year fourth year medical students will be assigned to the Memorial Hospital for clinical clerkships under the general direction of Dr. Allen O. Whipple.

Tuition has been increased to $725 per annum.

Dr. Francis D. Speer has been appointed professor of pathology and clinical pathology and director of the department to succeed Dr. George K. Higgins, resigned. A new department, the department of physiology and pharmacology, has been established under the direction of Dr. James W. Benjamin. Dr. Benjamin's appointment is that of professor of functional anatomy and director of the department of physiology and pharmacology. The Bird S. Coler (2,000 bed) Memorial Hospital, in the process of erection by the Department of Hospitals of the City of New York, has been assigned to the New York Medical College as a teaching unit by Commissioner Marcus D. Kogel. Dr. Thomas J. Kirwin, assistant director of the Brady Foundation, has been appointed professor of urology and director of the department, to succeed Dr. Sprague Carleton. Dr. Carleton has been appointed professor of graduate urology.

The Children's Center, administered by the Department of Welfare of the City of New York, has been affiliated with the department of pediatrics. A Scopicon for use in the department of pathology has been presented by an anonymous donor.

Appointments: Dr. Lawrence J. Slobody, professor of pediatrics and director of the department of pediatrics, to succeed Dr. Reuel A. Benson. Dr. Benson continues his association with the college as professor of graduate pediatrics. Dr. Milton J. Wilson, appointed director-in-committee of the department of orthopedic surgery, to fill the vacancy created by the death of Dr. Anson H. Bingham. Mr. E. Ross Winckler, hospital administrator of the Flower and Fifth Avenue Hospitals. Colonel Harold E. Glascock, Jr., professor of military science and tactics and administrative intern at the medical college.

The Medical College has received grants from the U. S. Public Health Service, U. S. Army, U. S. Navy, New York Heart Association, National Foundation for Infantile Paralysis, Milbank Memorial, Wakefield Foundation, Rosenstock Memorial Foundation, American Medical Association, a large number of pharmaceutical and drug houses, and several individual donors—to a total of aproximately $225,000.

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Columbia University
College of Physicians and Surgeons

Construction has been started on Columbia University's $2,000,000 cancer research center atop the Vanderbilt

Clinic building at the Columbia-Presbyterian Medical Center. The research unit will be housed in three new floors of laboratories to be added to the existing laboratories on the top of Vanderbilt Clinic, a division of the Presbyterian Hospital. A fourth floor will be added at the same time. This section will provide quarters for a number of clinics of the hospital. The National Advisory Cancer Council of the U. S. Public Health Service is providing $1,000,000 toward the construction cost. The remaining $1,000,000 will be provided by the university.

Columbia announces an extension and broadening of its program for Graduate Training in Physical Medicine and Rehabilitation. A three-year period of broad and intensive training is available to young doctors of high medical caliber who have had at least one year of internship and who plan to acquire training in physical medicine and rehabilitation.

The program will start with a brief didactic introduction in the techniques and philosophy of physical medicine and rehabilitation, followed by three phases of training: (a) Clinical experience and responsibility in the practice of physical medicine in the several departments of the Medical Center, and in rehabilitation at the Institute for the Crippled and Disabled. (b) Periods of clinical training under the Departments of Neurology and Orthopedic Surgery, and in special fields of internal medicine to supplement the students' general experience in those clinical fields where physical medicine plays the greatest role. (c) Opportunities for research or didactic basic science instruction according to the students' interest and aptitude.

For the present, three trainees may simultaneously have this opportunity on the three year program. As vacancies are available doctors with incomplete training in physical medicine will be accepted for shorter periods. Trainees will receive stipends equivalent to $2,500 per year. For one of the three years each Fellow will hold the position of resident in Physical Medicine at Presbyterian Hospital and receive supplementary stipend from the Baruch Gift. For the other years he will be a Baruch Fellow in Physical Medicine and Rehabilitation, supported by the Baruch Gift.

For further information, communicate with Dr. Robert C. Darling, Coordinator of Physical Medicine and Rehabilitation, College of Physicians and Surgeons, 630 West 168th Street, New York 32, New York.

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Medical College of Alabama

Having reached the age of retirement, Dr. James S. McLester, professor of medicine; Dr. J. M. Mason, professor of surgery; and Dr. Stuart Graves, director of admissions, were retired during the past summer.

Appointments: Dr. William H. Riser, Jr., has been appointed acting professor and chief of the department of medicine. Dr. Joseph K. Cline has been appointed professor and chief of the department of experimental biochemistry and cancer research. Dr. Cline heads the newly created Cancer Research Laboratory installed at a cost of over $100,000, utilizing funds from the National Cancer Institute and the American Cancer Society. Dr. Hisen Wu, visiting professor of biochemistry; Dr. William W. Pigman, associate professor of biochemistry; Dr. Charles C. Boyer, assistant professor of anatomy; Dr. Leroy L. Langley, assistant professor of physiology.

The Employee's Hospital of the Tennessee Coal, Iron and Railroad Company, a subsidiary of the U. S. Steel Corporation, is now a major clinical teaching unit. One-third of the senior class will receive instruction in that institution, with the remainder of the clinical instruction being offered in the clinics and wards of the major teaching unit, the Jefferson-Hillman Hospital. The addition of the T. C. I. Hospital makes available some 400 additional teaching beds and a large system of outpatient clinics. The T. C. I. clinical

faculty will be headed by Dr. Lloyd Noland, recently appointed clinical professor of surgery.

Construction on the new building for the School of Medicine and Dentistry will be begun at an early date. It is anticipated that this $2,000,000 building will be completed by January, 1951. It will house all of the preclinical divisions of the Medical and Dental Schools as well as the Dental Clinics.

The $1,500,000 Crippled Children's Hospital is now under construction. This is an affiliated teaching unit of the college and stands directly across the street from the Jefferson-Hillman Hospital. Contract has just been let for the $7,000,000, 500 bed Veterans Hospital with a completion date of less than two years. It will be a Deans' Committee Hospital for the Veterans Administration.

A gift of $20,000 has been received from the Liberty National Life Insurance Company for the installation of new deep therapy equipment in the department of radiology. The department of ophthalmology has received gifts totaling approximately $20,000. During the nine months' period ending May 15, 1949, the college received a total of $177,000 in gifts and grants.

* *

Tulane University of Louisiana School of Medicine

Appointments: Dr. Ernest Kun, instructor in pharmacology at the University of Chicago, and Dr. Nathaniel B. Kurnick, Karolinska Institute, Stockholm, Sweden, assistant professors of medicine. Dr. Samuel Barkoff, senior psychiatrist at the Springfield State Hospital, Sykesville, Md., associate professor of bacteriology.

A three year grant of $20,000 annually from the Edward G. Schlieder Educational Foundation of New Orleans has been made for development and expansion of clinical facilities in the psychiatric program. Dr. Robert G. Heath is head of the newly created department of psychiatry and neurology.

Dr. Roscoe L. Pullen, Seattle, has been appointed professor of graduate medicine, director of the Division of Graduate Medicine and vice dean. Dr. Pullen has been an associate professor of medicine and director of hospital planning at the University of Washington.

A law-science program has been established at Tulane to bring about an effective integration between the fields of law and medicine on the graduate and undergraduate levels. It will be directed by Dr. Hubert Winston Smith, former professor of legal medicine at the University of Illinois, who has been named research professor of law and medicine. He will serve also as professor of law and professor of legal medicine in the college of law and school of medicine, respectively, the two divisions in which the program will operate at once. In the school of medicine, a course in legal medicine has been established, designed to acquaint undergraduates with chief connections in which medical science may help in the administration of justice and the solution of social problems.

* *

University of Minnesota Medical School

Dr. S. R. M. Reynolds, of the Carnegie Institution of Washington and Johns Hopkins Medical School, will be guest faculty member at a continuation course in obstetrics to be presented November 17, 18 and 19. Dr. Reynolds will speak on the subjects, "The Development of the Pregnant Uterus" and "Uterine Mechanisms in Normal and Abnormal Labor."

A course in Child Psychiatry will be presented at the Center for Continuation Study on November 28 through December 3, 1949. This continuation course, which is intended for pediatricians and general physicians, will emphasize normal, emotional, intellectual and social development of infants and children and the emotional and behavior problems seen in infancy, childhood and

adolescence. Dr. Adrian Vander Veer of the department of psychiatry, University of Chicago, will participate as a visiting faculty member.

A continuation course in traumatic and pediatric surgery will be presented at the Center for Continuation Study on November 10, 11 and 12, 1949. The course, which is intended for general physicians, will emphasize the diagnosis and management of surgical conditions occurring in children. Special attention will be paid to the treatment of fractures, especially those occurring during childhood.

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University of Kansas
School of Medicine

The expansion of the physical facilities of the school of medicine was given a sharp boost by the action of the last Kansas legislature, which appropriated about $3,800,000 for construction on the campus of the Medical Center at Kansas City, Kansas. To this is to be added $460,000 of federal funds. The U. S. Public Health Service had allocated $200,000 for construction of facilities for cancer research.

The expenditure of this substantial amount is planned as follows: (1) An addition to the Nurses Home, which will double its present capacity. (2) Additions of two stories each to the Outpatient Clinic and the Eaton (negro) Hospital. (3) Construction of a basic science building to house the departments of pathology, pharmacology and perhaps bacteriology, as well as allowing increase in research space. (5) A 100 bed neuropsychiatric facility. (6) A 100 bed facility for tuberculosis and other diseases of the chest, both medical and surgical.

This expansion envisages within the next four years a 650 bed teaching hospital with all of the departments of the medical school on one campus.

Dr. Robert Guthrie succeeded Dr. Noble P. Sherwood as chairman of the department of bacteriology on the Lawrence campus July 1.

Washington University
School of Medicine

Work will be started immediately on construction of a $900,000 building for research in the basic sciences related to cancer. The new building will be located between the north and south buildings of the School of Medicine, forming a connection between the two buildings. The laboratory is in addition to two other buildings as additions to the Washington University Medical Center. The David P. Wohl Memorial Hospital will be named in honor of Lieut. David P. Wohl, Jr., who was killed in World War II. Grants totaling $750,000 have been received for erection of this hospital, with part of these funds coming from the Wohl Foundation, established by David P. Wohl, St. Louis industrial leader and philanthropist. Another grant totaling $250,000 came from the U. S. Public Health Service. The second hospital will house a new Barnard Free Skin and Cancer Hospital for which funds will come from the sale of the present Barnard Hospital and from private gifts. This hospital will also be located in the Medical Center, but will be administered by Barnard trustees. Funds for erection of the $900,000 research laboratory have come from the U. S. Public Health Service, which gave the university $450,000 contingent on the University raising an equal sum. This amount has come from gifts to the University previously announced.

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University of Mississippi
School of Medicine

Grants: Department of Physiology: (1) A research grant from the National Heart Institute of $12,582 for a one-year term. (2) A contract from the Army Chemical Corps of $19,700 for a two-year term. (3) A construction grant from the National Heart Institute of $4,435 for building an animal house and a laboratory to be used in conjunction with the research of the department of physiology. (4) A teaching grant of

$8,000 from the National Heart Institute.

The second $5,000 teaching grant in cancer from the U. S. Public Health Service, to the department of pathology.

Promotions: Dr. Marcus Eugene Morrison, to professor of bacteriology and chairman of the department of bacteriology and clinical laboratory diagnosis.

New Appointments: Dr. William Varner Hare, professor of pathology and chairman of the department of pathology; Dr. Lee Rogers, Jr., assistant professor of anatomy (part time); Dr. Hugh Miller Batson, Jr., assistant professor of physiology (part time); Dr. Calvin Fort Stubblefield, assistant professor of pharmacology (part time).

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Southwestern Medical School of the University of Texas

September 1, 1949, Southwestern Medical Foundation became Southwestern Medical School of the University of Texas. As a state institution, future admissions will be limited to bona fide residents of Texas. The 1949 first year class has been increased to 100 students and it is anticipated that this maximum will be maintained for future entering classes.

Sir Lionel E. H. Whitby, Kt., addressed the faculty and student body September 24 regarding treatment of leukemia. Sir Lionel is Regius Professor of Physic at the University of Cambridge, Past president of the British Medical Association, and President of the International Society of Hematology.

The following grants have been received from the Federal Security Agency, U. S. Public Health Service: (1) $24,500 for cancer teaching, under the direction of Dr. H. Walton Cochran; (2) $10,000 for undergraduate training and $10,000 for graduate work in neuropsychiatry, under direction of the department of neuropsychiatry; (3) $14,000 for teaching of cardiovascular diseases, under direction of the department of internal medicine.

Chicago Medical School

Dr. Maurice Oppenheim, chairman of the department of syphilology and dermatology, was recently honored by the University of Vienna on the occasion of his 50th graduation anniversary. In a cablegram, the rector of the university extended congratulations on behalf of the institution, and announced the resolution of the senate to renew his doctor's diploma. The "gold diploma" followed. Dr. Oppenheim was also invited to address the meeting of the German Dermatological Society to be held in Heidelberg in October.

Appointments: Dr. Roscoe C. Giles, assistant professor of surgery; Dr. Kurt Stern, associate in pathology; Dr. Herman Joseph, associate professor of neurology; Dr. Milton A. Tinsley, associate professor of neurosurgery; Dr. Harold Koenig, assistant professor of anatomy; Dr. Hans Elias, assistant professor of microscopic anatomy.

Dr. L. B. Nice, chairman of the department of physiology and pharmacology, has been elected secretary of the Illinois Section of the Society for Experimental Biology and Medicine.

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University of Wisconsin Medical School

Dr. Walter J. Meek, professor of physiology and associate dean, has retired. In recognition of his contributions to medical education, he has received the title of Dean Emeritus. His successor as associate dean is Dr. Otto A. Mortensen, professor of anatomy.

A grant of $291,000 for construction of a Heart Research Institute on the University campus was made by the U. S. Public Health Service through the National Advisory Heart Council. To accommodate the new institute, University regents authorized construction of a fifth and sixth floor addition to McArdle Memorial Institute, which houses the University cancer research.

Dr. John W. Barnard has been appointed associate professor of physiology.

University of Louisville
School of Medicine

Dr. C. Howe Eller, Richmond, Va., has been appointed head of the department of preventive medicine and public health and director of the Louisville-Jefferson County Health Department.

The school has adopted the faculty-adviser plan. Small groups of medical students will be assigned advisers who will keep in close touch with the students' progress in school in order to assist them to improve in their studies. Students in turn will be free to seek advice from any faculty members.

Plans are being made to double the scope of a summer training program in which medical students are assigned to county health departments in Kentucky. This summer nineteen students worked with as many county health units in an experimental project whereby future doctors became acquainted with community health problems. Students were paid from Kentucky State Department of Health training funds.

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Yale University
School of Medicine

Sixty-five students, including five women, registered this year in the first year class. The School of Medicine is starting its 136th academic year. Approximately one-third of the class comes from New England, although New York leads in geographical distribution with 17 of the 65 students coming from the Empire State.

The U. S. Public Health Service has made institutional grants for the expansion of both undergraduate and graduate teaching in cancer relating to public health, psychiatry for both adults and children and in diseases of the heart.

The total enrollment at Yale is 419 and consists of the following: 45 Fellows, 109 graduate students, 248 candidates for the M.D. degree, 20 candidates for the Master of Public Health degree, and two candidates for the Doctor of Public Health degree.

College of Medical Evangelists

Representative faculty members of the School of Tropical and Preventive Medicine, one of the eight schools composing the College of Medical Evangelists, saw eleven senior medical students receive their diplomas from the School of Health and Tropical Diseases of Mexico City, on August 31. Dr. Manuel Martinez Baez was directly in charge of instruction. The School of Tropical and Preventive Medicine acted as sponsor to this first group of medical students from the United States to have gone to a Latin country to study tropical diseases. The invitation to hold the summer session at the Boca del Rio Experimental Station was extended by the Health Department of the Mexican Government at the suggestion of Dr. Alonzo Hardison, who is director of the Institute of Inter-American Affairs in Mexico and who took a personal interest in the entire course.

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Ohio State University
College of Medicine

Dr. Eric Ogden has been appointed professor and chairman of the department of physiology to succeed Dr. Fred A. Hitchcock, acting chairman. Dr. Ogden occupied the same position in the University of Texas Medical Branch.

The Life Insurance Medical Research Fund has made a grant in aid of Dr. Ogden's work on the reversibility of effects of hypertension.

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University of Chicago

Dr. Wright R. Adams, professor of medicine and associate dean of the Division of Biological Sciences, has been appointed chairman of the department of medicine. He will succeed Dr. Lowell T. Coggeshall, who resigned as chairman of the department of medicine to devote full time to his post as dean of the Division of Biological Sciences and to his research work in internal medicine and tropical diseases.

University of South Dakota
School of Medicine

Dr. E. H. Lowrance has been appointed assistant professor of anatomy.

The State Cancer Society has made two grants for research: $6,510 on a one year basis to Doctors Ferguson, Schwartz and Scott of the pathology, biochemistry and anatomy departments, respectively, this work to do with "Effect of Specific Nutritional Deficiencies on Tumor Growth and Morphology." The other is renewal to Dr. J. B. Belogorsky in pharmacology of $1,000 for his work in the "Phyto-pharmacological Actions of Cancerous Blood."

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University of California
Medical School

A synchrotron capable of generating 70 million volt X-rays will be placed in operation at the Medical School, the first machine of its type for research on high energy radiation in the treatment of cancer. Research will be directed by Dr. Robert S. Stone, professor of radiology. The machine will cost approximately $230,000. It will be housed in a new building, costing about $215,000, which will be constructed expressly for research with the new instrument.

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University of Maryland
School of Medicine

The National Institute of Health has awarded to Dr. John C. Krantz, Jr., professor of pharmacology, a grant of $6,500 for the purpose of conducting studies in the mechanism of the action of drugs on the cardiovascular system.

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Medical College of Virginia

Dr. Claude C. Coleman, professor of neurologic surgery, was honored at a scientific meeting commemorating the founding of the department of neurologic surgery at the college 30 years ago with Dr. Coleman as the department head.

University of Washington
School of Medicine

For 30 years, Dr. John L. Worcester, anatomy professor, dreamed of the day when the university would have a medical school. He died in 1947 before he saw his lifelong hope fully realized. But his memory will be perpetuated in the new medical school. In recognition of his many years of service and inspiration to premedical and nursing students, a plaque has been erected in his honor in the Health Sciences Building by the Washington State Medical Association. The university has designated the anatomy department facilities as the Worcester Memorial Laboratories.

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University of Utah
School of Medicine

Dr. H. L. Marshall, professor and head of the department of public health and preventive medicine, has been named acting dean.

Dr. James F. Bosma, formerly assistant professor of pediatrics at the University of Minnesota, has been appointed to fill the vacancy left by the resignation of Dr. John A. Anderson as professor and head of the department of pediatrics.

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Baylor University
College of Medicine

Baylor has received a gift of approximately $53,000 to establish an instructorship. A cash donation of $3,000 and undivided oil royalties valued at $50,000 were made available by Mr. and Mrs. B. M. Goldsmith of Quitman as a memorial to their father, the late Dr. John B. Goldsmith. The fund will be administered by the Texas Baptist Foundation.

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University of Illinois
College of Medicine

The Junior League of Chicago has awarded $13,000 to the university for the purpose of maintaining and operating the consultation clinic for epilepsy.

University of Toronto
Faculty of Medicine

The Faculty of Medicine offers a three year postgraduate course in ophthalmology. The graduate instruction in ophthalmology in the teaching hospitals in Toronto has been coordinated under the direction of the university. The student spends the first year on a fellowship, the value of which is approximately $1,400, in one of the basic sciences of ophthalmology, and two years are spent on the intern service of one or more of the university teaching hospitals. Approximately four hours of didactic teaching are arranged for the students by members of the staff each week from October to May.

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Marquette University
School of Medicine

With the aid of a $10,000 grant awarded by the Edward Uhrig Foundation, Marquette will expand its teaching program in pediatrics by adding a full time physician instructor to its staff. Under the direction of Dr. Francis R. Janney, director of the pediatrics department, the appointee will carry on teaching activities at the Milwaukee Children's Hospital. The gift is to be expended over a three year period, beginning with the 1949 school term.

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Northwestern University
Medical School

Dr. Theodore R. Van Dellen, assistant professor of medicine, has been appointed assistant dean. He succeeds Dr. George H. Gardner who resigned August 31. Dr. Guy P. Youmans, professor of bacteriology, is now chairman of the department. He succeeds Dr. Alexander A. Day who retired August 31.

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University of Virginia
Department of Medicine

Dr. William Parson has been appointed head and professor of the department of medicine.

Western Reserve University
School of Medicine

Appointments: Dr. Stuart H. Walker, professor of military science and tactics and fellow in pediatrics; J. Oliver Lampen, Ph.D., assistant professor of biochemistry at Washington University, associate professor of microbiology; assistant professor of pathology, Dr. Russell S. Fisher; Dr. Alan R. Moritz, head of the department of legal medicine at Harvard, has been appointed professor of pathology and director of the Institute of Pathology.

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Wayne University
College of Medicine

Wayne has been granted $113,850 by the Kresge Foundation which will be known as the Kresge Research Fund. The grant, which is payable in installments of $37,950 over a three year period, is to be used for the study of revascularizing ischemic limbs and the study of the physiologic, anatomic and surgical possibilities of this technic.

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Boston University
School of Medicine

Dr. William C. Boyd, professor of immunochemistry, has been given leave of absence to accept an assignment under the sponsorship of the U. S. Navy. He will study public health problems in Egypt and other parts of Africa. Dr. Boyd's interest is in the field of anthropology.

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Indiana University
School of Medicine

Dr. Herbert S. Gaskill, associate in psychiatry at the University of Pennsylvania School of Medicine, has been appointed professor of psychiatry.

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University of Vermont
College of Medicine

Dr. William G. Young has been appointed assistant professor of psychiatry in charge of the mental hygiene clinics.

General News

West Virginia Four Year Medical School

Dr. Alan Gregg, director of medical science for the Rockefeller Foundation, and Dr. Herman G. Weiskotten, dean of Syracuse University College of Medicine and chairman of the American Medical Association Council on Medical Education and Hospitals, have been asked to conduct separate surveys concerning the advisability of building and maintaining a four year school of medicine and dentistry in West Virginia.

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Jane Coffin Childs Memorial Fund for Medical Research

This fund, during the past year, has made grants for support of cancer research projects and fellowship appointments totaling $92,435. Among the largest of the 22 grants are $10,000 to Dr. E. S. Guzman Barron for studies of the metabolism of blood cells and of blood producing tissues in health and disease; $8,500 to Dr. Samuel C. Harvey, Yale University School of Medicine, for clinical and laboratory studies of cancer; $8,000 to Dr. Eugene L. Opie, Rockefeller Institute for Medical Research, for studies on osmotic and cytologic effects of hepatic tumor-producing diets; $7,500 to Dr. Frances Duran-Reynals, Yale University School of Medicine, for the third year of his present grant for the study of the relation of viruses to tumors.

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U. S. Army Civilian Internships

The Army Medical Department will maintain 300 spaces for the current fiscal year in the Civilian Intern Program, which, since its inception last year, has been one of the most effective means of recruiting medical personnel for the Army.

Under the Civilian Intern Program, senior medical students who have been accepted for internship training in a civilian hospital approved by the American Medical Association are invited to apply for commissions in the Medical Corps Reserve. If they qualify, they are commissioned as first lieutenants in the Reserve and complete their internships as officers on active duty, with full pay and allowances. On completion of their internship training, they apply for commissions in the Regular Army Medical Corps.

The Civilian Intern Program is one phase of the Army Medical Department's Graduate Professional Training Program. Another is the Military Intern Program, under which senior medical students who apply and are accepted for Medical Corps Reserve commissions as first lieutenants receive their internship training in an Army general hospital approved by the Council on Hospitals and Medical Education of the American Medical Association.

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Angiology

An important new periodical in an important new field will begin publication in February, 1950. It will be called "Angiology, The Journal of Peripheral Vascular Diseases." Editor-in-Chief will be Dr. Saul S. Samuels, Chief of the Department of Peripheral Arterial Diseases, Stuyvesant Polyclinic, New York City. Among associate editors in the United States are Dr. Alton Ochsner, of Tulane; Dr. Keith Grimson, of Duke; Dr. Leo Loewe, of Long Island Medical College; Dr. D. W. Kramer, of Jefferson; Dr. Gerald Pratt, of N. Y. University. A number of prominent foreign physicians will also serve. About 600 pages a year will be published at a subscription price of $8.00. The Williams & Wilkins Company, of Baltimore, will be the publishers.

Rural Medical Scholarship

The Ohio State Medical Association has granted its first annual Rural Medical Scholarship to C. Craig Wright of Winterset. Under the terms of the scholarship Mr. Wright will receive $500 each year during the four years he is in medical school. He completed his premedical training at Ohio State University. The scholarships were established to encourage rural young men and women to take up the study of medicine with the hope that they will become country doctors. One scholarship will be awarded annually to a freshman medical student. At the end of the first four year period and during subsequent years, each of four students will be receiving the annual $500 award.

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Mississippi Medical Scholarship

Thirteen Mississippians were conditionally approved for state medical education loans by the State Medical Education Board at its meeting on July 30. The total number of students receiving state medical education loans, including those now in internship and those who have entered practice, is 202, representing seventy counties and one hundred and fifteen towns of the state. Seven of these students will be enrolled this fall at the University of Mississippi School of Medicine, 3 at Tulane University, 1 at Emory University, 1 at Columbia University, and 1 at Harvard University.

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Federal Research Grants

Federal Security Agency has announced the award of $2,056,426 in grants for continued support of two hundred and seventeen medical and allied research projects under way in ninety-four institutions. They comprise chiefly medical schools, universities and hospitals in thirty-one states, the District of Columbia, Alaska, Canada, Denmark, Norway and Guatemala. Awards for new projects are still being withheld, pending possible action by Congress reducing appropriations of Public Health Service and other government agencies. The projects include studies of deafness and speech defects, peptic ulcers, the common cold, relation of the endocrine glands to aging, changes induced in the living cell by irradiation, the longevity and behavior of pathogenic bacteria in frozen food, and the viability of enteric bacteria in sea water and factors controlling the fate of sewage after discharge in the sea.

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Selection of Students

The question of admission to universities is often raised in Belgium.

Professor Weekers discussed this question in a recent issue of Revue Medical de Liege. He said that the present system of admission without formality of students who hold certificates of graduation from secondary schools is inadequate. He proposed that every student present himself for a university examination the first year. The examination should be held by the examining board and the student should send to this board his certificate of secondary studies, accompanied by a final evaluation of the director of the establishment which issued the certificate. A bulletin should reproduce all the examination marks obtained in the different subjects each year. In this way the university examination board will be informed about the general educational status and previous training of the applicant. Also, the students will know that their application to their studies during the entire course will be carefully evaluated in the selection of students for further study at the university. Furthermore, it will be necessary to select the students in the first year of their studies at the faculty. At the end of the first year of studies the students should be subjected to an examination in the subjects which they have chosen and for which they consider themselves qualified. The applicants who pass the examinations will be permitted to continue their studies.

Regular Corps Examination for Scientist (Physiologist) U. S. Public Health Service

Competitive examinations for appointment of officers to the Regular Corps of the U. S. Public Health Service will be held February 6, 7 and 8, 1950, at a number of points throughout the United States located as centrally as possible in relation to the homes of candidates. Applications must be received not later than January 2, 1950.

Appointments will be made in the grades of Assistant Scientist (equivalent to Army rank of First Lieutenant) and Senior Assistant Scientist (equivalent to Captain), are permanent and provide an opportunity for qualified physiologists to pursue their profession as a life career in the Service. Assignments are made with consideration for the officer's preference, ability and experience, and will include research and public health activities.

Requirements: United States citizenship. At least 21 years of age.

Assistant Scientist: At least seven years of educational training and professional experience subsequent to high school, including receipt of the doctor's degree in physiology from a university of recognized standing.

Senior Assistant Scientist: At least ten years of educational training and professional experience subsequent to high school, including receipt of the doctor's degree in physiology from a university of recognized standing.

Applicants who meet these qualifications within nine months of the date of the written examination will be admitted, but may not be appointed until they fulfill the requirements. Applications must be approved by the Board of Examiners before the candidates may be admitted to the examination, and the Board will have final determination of the candidate's competence to take the examination for either grade. The entrance examination will include an oral interview, physical examination, and comprehensive objective tests in the professional field.

The written professional examination will be at a level of difficulty appropriate to the education and experience required of candidates for each grade. The following subjects ae included:

General physiology as applied to the organism and to its constituent parts; physiology of nutrition, secretion, excretion, respiration, circulation, muscle, nerve, endocrines, and reproduction. Candidates for the grade of Assistant Scientist will be examined, in addition to the subjects listed above, in the basic sciences.

Gross pay is governed by the Career Compensation Act of 1949, and is identical to that of officers of equivalent rank in the Army and Navy. Under current legislation, entrance pay for the Assistant with dependents is $4,486.56 per annum; for Senior Assistant, $5,346 per annum. These figures include subsistence and rental allowance.

Promotions: Provisions are made for promotion at regular intervals up to and including the grade of Senior Scientist (Lt. Col.) and for selection for promotion to the grade of Scientist Director (Col.).

Retirement pay after 30 years of service or at the age of 64 is three-fourths of annual basic pay at the time of retirement. Retirement for disability is authorized under the Career Compensation Act and minimum disability retirement pay is one-half of annual basic pay at the time of retirement.

Additional benefits include periodic pay increases (time served as a member of the armed forces is credited), 30 days annual leave, sick leave, full medical care, and many of the usual privileges extended to officers of the military forces.

Application forms and additional information may be obtained by writing to the Surgeon General, United States Public Health Service, Federal Security Agency, Washington 25, D. C. Attention: Division of Commissioned Officers. Applications received after January 2, 1950, will not be accepted.

Book News

Medical Etymology

By O. H. Perry Pepper, M.D., Professor of Medicine, University of Pennsylvania. W. B. Saunders Company, Philadelphia. 1949. Price, $5.

The history and reivation of medical terms for students of medicine, dentistry and nursing. Medical terminology has never been easy, and it becomes more troublesome year by year as new terms are born. This handbook will lessen these difficulties and will help to interest students in words employed and in their proper usage. It is not a dictionary. It is more concerned with the origin and derivation of a word than with its meaning. It contains less than 4,000 words which represent almost all the roots the student will encounter. The student may use this book in several ways, each of which will be helpful in the accumulation, understanding and use of the necessary vocabulary. Incidentally, it is fascinating reading. The author deserves high commendation for the excellent job he has done in producing this book. Every student should have a copy.

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Atlas of Roentgenographic Positions (Two Vols.)

By Vinita Merrill (While Educational Director, Picker X-Ray Corporation). The C. V. Mosby Company, St. Louis. 1949. Price, $30.

This monumental work is intended to be a practical reference book for x-ray technicians. It describes many roentgenographic positions and procedures, information pertaining to anatomy and physiology, the definitions of the more unusual terms used in roentgenography and a very extensive bibliography for further detailed study. Of course, these two books are illustrated profusely with excellent reproductions—photographs, radiograms and line drawings.

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Diseases of the Nervous System

By F. M. R. Walshe, M.D., Physician in Charge of the Neurological Department, University College Hospital. Ed. 6. The Williams and Wilkins Company, Baltimore. 1949. $5.

It is refreshing to read a good text on diseases of the nervous system. Psychiatry has usurped so much attention that other clinical entities which affect the nervous system have been shoved into the background. This is a good student text.

Cunningham's Manual of Practical Anatomy

Revised and edited by James C. Brash, M.D., Professor of Anatomy, University of Edinburgh. Ed. 11. Oxford University Press, New York. 1949. Price, 3 Volumes, $12.75 ($4.25 each).

This has been a standard dissecting manual for seven decades and is still a favorite with instructors and students. The present issue is divided into three volumes: I—Upper and Lower Limb; II—Thorax and Abdomen; III—Head and Neck and Brain. While much of the work has been revised, its value remains unimpaired. It is replete with many excellent illustrations which have always made a strong appeal to the student.

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The American Illustrated Medical Dictionary

By W. A. Newman Dorland, M.D., with the collaboration of E. C. L. Miller, M.D. Ed. 21. W. B. Saunders Company, Philadelphia. 1949.

This book does not need any comment. It has been a much used dictionary for almost fifty years. It is a complete record of the terms used in medicine, surgery, dentistry, pharmacy, chemistry, nursing, veterinary science, biology, medical biography, etc., with the pronunciation, derivation and definition. The word "illustrative" is a proper designation. The numerous tables give much valuable information.

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Human Pathology

By Howard T. Karsner, M.D., Former Professor of Pathology, Western Reserve University School of Medicine. Ed. 7. J. B. Lippincott Company, Philadelphia. 1949. Price, $12.

Nine hundred pages of text, 584 fine illustrations, 241 of them new and many pages of references provide a coverage that can be accepted as being complete, at least so far as human pathology is concerned, in which field the author is an outstanding authority. Aside from revisions made to bring the text up to date, two new chapters have been added. They cover diseases of the eye and of the skin. Much revision has been made in the chapters on infectious diseases and diseases of the liver. The use of large type and a high grade of enameled stock have made the book somewhat cumbersome, but its quality more than offsets this handicap. The double column facilitates easy reading.

Essentials of Orthopedics

By Philip Wiles, F.R.C.S. (Eng.), Hon. Orthopedic Surgeon, Middlesex Hospital and King Edward Memorial Hospital. The Blakiston Company, Philadelphia. 1949. Price, $10.

Covers all diseases and injuries of the bones and joints and of the muscles and nerves controlling them. A regional arrangement is used. Physiology and pathology are explained and application made to diagnosis and treatment, the latter being detailed and specific for the practitioner. Divided into fifteen chapters, each chapter covering one part of the body, except for the chapters dealing with infection, tuberculosis, chronic arthritis, tumors of bone, diseases of the nervous system. The book is well illustrated.

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Experimental Surgery: Including Surgical Physiology

By J. Markowitz, M.B.E., M.B., M.S. in Experimental Surgery (Minn.). Ed. 2. The Williams & Wilkins Company, Baltimore. 1949. Price, $7.

Whether experimental surgery should be included in the undergraduate medical curriculum is a subject for discussion. Not all medical colleges offer such a course, probably because it is felt that it is an experience which only the graduate who intends to become a surgeon should have. However, this book covers the ground thoroughly and the text is well illustrated by more than 300 fine illustrations. If a text in this subject is needed, here is one that can be recommended.

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Bridges' Dietetics for the Clinician

By Harry J. Johnson, M.D., formerly Assistant Clinical Professor of Medicine, New York Post Graduate Medical School. Ed. 5. Lea & Febiger, Philadelphia. 1949. Price, $12.

Twenty-eight authorities have contributed to this edition. It is a complete and authoritative guide in the application of accepted dietary principles. All phases of the subject are covered fully, including vitamin factors in the diet, classification and structure of foods, acid-base factors, and a general discussion of the mechanics, physiology and chemistry of digestion. A detailed consideration of effective dietetic management of diseases of adults is given. This includes scores of actual diets from which specific menus can be readily devised to meet individual conditions imposed by economic status, seasonal availability, cooking facilities and other pertinent factors. There is a new chapter on folic acid; one section contains complete food tables covering food and beverage analyses. The alphabetical arrangement of diseases and diets to be given will be appreciated.

Demonstrations of Physical Signs in Clinical Surgery

By Hamilton Bailey, F.R.C.S. (Eng.), Surgeon in charge of the Genitourinary Department, Royal Northern Hospital, London. Ed. 11. The Williams & Wilkins Co., Baltimore. 1949. Price, $9.

Based entirely on clinical cases with accompanying illustrations—657, to be exact, which makes a unique text for medical students. The text is concise but giving complete coverage,—and it is easy to read and understand.

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Surface and Radiological Anatomy

By A. B. Appleton, M.D., Professor of Anatomy, University of London (Medical School, St. Thomas Hospital); W. J. Hamilton, M.D., Professor of Anatomy, University of London (Charing Cross Hospital Medical College), and G. Simon, M.D., Demonstrator of Radiological Anatomy, Medical College, St. Bartholomew's Hospital. Ed. 3. The Williams & Wilkins Company, Baltimore. 1949.

Revised; rewritten; addition of some new illustrations, nearly 400, all very well done, drawings and radiograms. A good aid to the study of anatomy.

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Medical Etymology

By O. H. Perry Pepper, M.D., Professor of Medicine, University of Pennsylvania. W. B. Saunders Company, Philadelphia. 1949.

Presenting the history and derivation of medical terms which should be welcomed with much acclaim by every medical student. Terminology always is a bugbear to the medical student. This book clarifies that situation; in fact, although not a dictionary, it does give the origin and derivation of terms used in medical "lingo." The book is divided into four parts, two of which concern medicine—preclinical and clinical subjects. It is a fascinating book, the first of its kind. The author must be congratulated on having conceived and then materialized his thoughts to good advantage for both the student and the practitioner.

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Essentials of Gynecology

By Leo Brady, M.D., Assistant Professor of Gynecology, Johns Hopkins University; Ethna L. Kurtz, R. N., formerly Head Nurse, Brady Urological Institute, Johns Hopkins University; and Eileen McLaughlin, R. N., Instructor and Supervisor Gynecological Nursing, Johns Hopkins University. Ed. 2. The Macmillan Company. 1949. Price, $3.

A summary of the senior author's lectures to nurses, augmented by observations made by one of his associate authors, a nurse.

Physiology in Health and Disease

By Carl J. Wiggers, M.D., Professor of Physiology and Director of the Department, School of Medicine, Western Reserve University. Ed. 5. Lea & Febiger, Philadelphia. 1949. Price, $10.

A presentation of the functional organization of the body and its parts, with emphasis given to basic physiology and the application of physiological principles to medical practice. This book contains the comparison of experimental reactions which can be induced in normal organisms with reactions that occur in disease. The entire text is designed to meet the varied demands of medical students, clinicians, investigators and progressive practitioners of medicine. The entire book has been thoroughly revised. Approximately one-third of the text-matter was rewritten to include the many new and improved methods and techniques, as well as the new interpretations which they occasion. Important in basic physiology is the inclusion of new matter relating to biophysical subjects such as bioelectric currents, oxidation, muscle contraction, impulse transmission, hemodynamics, blood flow through special organs and physical processes of secretion. Of special clinical interest are the discussions of pain, headache, paralysis, spasticity, coagulation and anticoagulants, hypertension, artificial kidneys, dyspnea, gastroduodenal ulcer, diabetes, fever and many other commonly met diseases and conditions. A feature that appears for the first time in a textbook on physiology is an entire chapter on the physiological basis of psychosomatic reactions.

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Fractures

By Paul B. Magnuson, M.D., Professor of Bone and Joint Surgery and Head of the Department, Northwestern University Medical School, and James K. Stack, M.D., Assistant Professor of Bone and Joint Surgery, Northwestern University Medical School. Ed. 5. J. B. Lippincott Company, Philadelphia. 1949. Price, $7.00.

Revised and brought up to date. The use of antibiotics is stressed. A new chapter is included on the so-called "barnyard" reduction of fractures, covering certain simple methods of treatment that may be used under all circumstances.

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A Synopsis of Medicine

By Sir Henry Letherby Tidy, Consulting Physician to St. Thomas Hospital. Ed. 9. The Williams & Wilkins Company, Baltimore. 1949. Price, $7.50.

Getting larger all the time but still an excellent synopsis which medical students will enjoy.

Streptomycin and Dihydrostreptomycin in Tuberculosis

Edited by H. McLeod Riggins, M.D., College of Physicians and Surgeons, Columbia University, and H. Corwin Hinshaw, M.D., Stanford University School of Medicine. National Tuberculosis Association, New York. 1949. Price, $7.50.

Planned originally as a report to the six manufacturing chemical and pharmaceutical firms which donated more than $1,000,000 worth of streptomycin to eight clinical and three central laboratory investigators designated by the ATS for clinical and laboratory studies with the drug, the book was enlarged, revised, and brought up to date on the use of streptomycin, dihydrostreptomycin, and on para-amino-salicylic acid and the sulfones in combination with the two streptomycins, in the treatment of all forms of tuberculosis. Although the reports of the eight clinical and three laboratory investigators who cooperated in the project form the basis of the book, their reports are supplemented by chapters on special clinical and basic and practical laboratory phases of chemotherapy in tuberculosis — experimental, bacteriological, and pathological. Fifty-eight contributors from all parts of the country collaborated.

The historic as well as the scientific interest of the book is heightened by the inclusion of the first paper by Dr. Selman A. Waksman and his associate, Dr. Albert Schatz, who announced the in vitro bacteriostatic effect of the drug on the tubercle bacillus in 1944, and also the first papers published on streptomycin in experimental and clinical tuberculosis by Dr. William H. Feldman, Dr. Hinshaw, and their associates at the Mayo Clinic.

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Blood and Plasma Transfusion

By Max M. Strumia, M.D., Associate Professor of Pathology, and John J. McGraw, M.D., Instructor in Pathology, Graduate School of Medicine, University of Pennsylvania. F. A. Davis Company, Philadelphia. 1949. Price, $7.50.

Presenting the most rational clinical approach to the subject and the simplest, safest and most satisfactory laboratory methods. Technical and clinical phases are brought together as a single unit.

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Isotropic Tracers and Nuclear Radiations: With Applications to Medicine and Biology

By William E. Siri and Associates. Division of Medical Physics, Department of Physics and Radiation Laboratory, University of California. McGraw-Hill Book Company, Inc., New York. 1949. Price, $12.50.

For the specialist.

Operative Technic in Specialty Surgery

Edited by Warren H. Cole, M.D., Professor and Head of the Department of Surgery, College of Medicine, University of Illinois, and Associates. Introduction by Allen O. Whipple, M.D. Appleton-Century-Crofts, Inc., New York. 1949. Price, $10.

Dr. Cole and his American co-authors have attempted to provide, for general surgeons and physicians training for surgical practice, clearly stated descriptions of the operative technics they use and recommend. Hundreds of fine illustrations complement and supplement the text. In his introduction, Dr. Allen O. Whipple directs attention to certain useful features of this completing volume and comments on the recognized skill of all of the authors as operating surgeons.

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A Year With Osler: 1896-1897

By Joseph H. Pratt, M.D., Physician in Chief, Joseph H. Pratt Diagnostic Hospital, Boston. The Johns Hopkins Press, Baltimore. 1949. Price, $4.

The author was a member of the Class of 1898 at Johns Hopkins. In his introduction and preface, Dr. Pratt discusses the personality and traits of Dr. Osler in a true and most enjoyable manner. This part of the book really is worth more than the remainder of the text since that is a presentation of patients and discussion of their ailments in the Osler manner. Dr. Pratt says that Osler spoke so slowly that he could take down his exact words. This book, summed up, is the recreation of a great man and a great teacher. Every clinical teacher of today should have a copy of this book and attempt to follow in the footsteps of a master of teaching.

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Autobiography of Dr. Robert Meyer (1864-1947)

With a memoir of Dr. Meyer by Emil Novak, M.D. Henry Schuman, New York. 1949. Price, $2.50.

Dr. Meyer's activities in the fields of obstetrics, gynecology and pathology are well known. Here he tells his story. Driven into exile by the Nazis he came to the United States. He says: "I have had an exceedingly beautiful life which would be well living once more."

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Pharmaceutical Compounding and Dispensing

Editor-in-Chief, Rufus A. Lyman, M.D., Technical Editor, George Urdang, Ph.G., D.Sc., and six Advisory Editors. J. B. Lippincott Company, Philadelphia. 1949. Price, $6.50.

For the pharmacist.

The Origin of Medical Terms

By Henry Alan Skinner, M.B., Professor of Anatomy, University of Western Ontario. The Williams & Wilkins Company, Baltimore. 1949. Price, $7.

An attempt to place in the hands of medical students and those interested in medical terminology a reference book of outstanding medical terms, particularly those likely to be encountered as the student enters on the study of medicine. The material covers the general field of medicine but is particularly directed toward the basic medical sciences. The author regrets that students entering medicine have little Latin and no Greek, a deficiency which is apparent in the matter of word origins. He tries to overcome this deficiency. A few of the terms discussed are: "What delirium has to do with ploughing:" "Why a heart valve was named for a bishop's cap;" "What the origin of the word morphine is." It is a most enjoyable and informative book.

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Jordan-Burrows Textbook of Bacteriology

By William Burrows, Ph.D., Professor of Bacteriology, University of Chicago; with the collaboration of Francis B. Gordon, M.D., Richard J. Porter, Ph.D., and James W. Moulder, Ph.D. Ed. 15. W. B. Saunders Company, Philadelphia. 1949. Price, $9.

First presented in 1908, this book has undergone many revisions and much of its contents have been rewritten completely to bring the matter presented up to date. This book will no doubt, and deservedly so, continue to be a favorite text among medical students. The text covers 38 chapters, beginning with a history and development of bacteriology (very interesting) with following chapters on laboratory methods, morphology, cell structure, growth and chemical composition of bacteria; bacterial physiology; the effect of physical and chemical agents on bacteria; bacterial heredity and variation, etc.

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Principles of Human Physiology

By C. Lovatt Evans, F.R.C.P., F.R.S., LL.D., Jodrell Professor of Physiology, University College, London. Chapters on Special Senses by H. Hartridge, M.D., Director of Vision Research Unit, London. Ed. 10. Lea & Febiger, Philadelphia. 1949. Price, $12.

A scientific rather than clinical discussion of physiology. Revised, new matter and new illustrations added.

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Memoirs of Eighty Years

By James B. Herrick, Chicago. University of Chicago Press. 1949. Price, $5.

A famous doctor relives a fascinating era in the history of Chicago and modern medicine.

The Physician's Business: Practical and Economic Aspects of Medicine

By George D. Wolfe, M.D., Assistant Clinical Professor of Otolaryngology, New York Medical College. Foreword by Harold Rypins, M.D. Ed. 3. J. B. Lippincott Company, Philadelphia. 1949. Price, $10.

This book covers the important aspects of the practice of medicine, particularly the beginning of medical practice, in a simple, clear and candid manner. It discusses the nonprofessional problems confronting every professional novice in medicine. The career of medicine is covered from residency to retirement, including specialization, private or group practice, location and equipment. Part 1 deals with the "Doctor in the Making." Part 2 with the "Management of a Medical Practice." Part 3 with "Technics," such as prescribing, solutions, moulages. Part 4, "Professional Contacts." Part 5, the "Doctor and the Law." Part 6, "Finances," including income tax, insurance, investments. Part 7, "Social Medicine." The coverage is so complete and thorough that it is impossible in a brief notice to mention all the items discussed. Suffice it to say that everything that the physician, young or old, wants to know and should know about the practice of his profession is covered in this book.

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Hindu Medicine

By Henry R. Zimmer, Ph.D., Late Visiting Lecturer in Philosophy, Columbia University; formerly Professor of Sanskrit, University of Heidelberg. Edited with a Foreword and Preface by Ludwig Edelstein, Ph.D. The Johns Hopkins Press, Baltimore. 1949. Price, $4.

In 1929, the late Dr. Emmanuel Libman of New York gave $10,000 to the Johns Hopkins University for the establishment of a lectureship in the History of Medicine. In accordance with Dr. Libman's wishes it was named The Hideyo Noguchi Lectureship to pay tribute to the memory of the distinguished Japanese scientist. The present volume owes its origin to the seventh course of lectures on this foundation which were delivered on November 25, 27 and 29, 1940, at the Johns Hopkins Institute of the History of Medicine by the late Professor Zimmer.

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Clinical Biochemistry

By Abraham Cantarow, M.D., Professor of Biochemistry, Jefferson Medical College, and Max Trumper, M.D., Lecturer in Clinical Biochemistry, Naval Medical School. Ed. 4. W. B. Saunders Company, Philadelphia. 1949. Price, $8.

Extensive revision of many sections and the addition of much new material.

Textbook of Bacteriology

By C. H. Browning, M.D., Gardner Professor of Bacteriology, University of Glasgow, and T. J. Mackie, M.D., Professor of Bacteriology, University of Edinburgh. (Ed. 11 of Muir & Ritchie's Manual.) Oxford University Press, London. 1949. Price, $12.75.

Rewritten and rearranged with the addition of much new material. The subject is gone into in great detail. While emphasis is laid principally on organisms responsible for disease in man, the infections of animals also receive attention. Fungi and protozoa are included as well as viruses. The account of general laboratory methods has been moved into an appendix. The nomenclature of previous editions of this book have been retained. However, in the headings of chapters and sections dealing with particular bacteria, the generic and specific names adopted in "Bergey" have been given as well in most cases. The bibliography covers 54 pages!

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German-English Medical Dictionary

Compiled by F. S. Schoenewald, M.D., Berlin. The Blakiston Company, Philadelphia. 1949. Price, $8.50.

This book should be a "must" in the library of every physician—and student—who can read German. It gives the correct English translation of every German medical term—which is important because altogether too often German words are not given the correct English translation. The book is an excellent addition to the physician's library.

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Nursing in Clinical Medicine

By Julius Jensen, Ph.D. (in Medicine), Assistant Professor of Medicine, Washington University, School of Medicine, and Deborah M. Jensen, R.N., Lecturer in Nursing Education, Washington University. Ed. 3. The Macmillan Company, New York. 1949. Price, $4.

For nurses. A complete set of kodachrome slides is in preparation to supplement the text. Coverage: Much ground which should have value to nurses as well as physicians.

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A History of Otolaryngology

By R. Scott Stevenson, M.D., and Douglas Guthrie, M.D. The Williams & Wilkins Company, Baltimore. 1949. Price, $5.

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A Textbook of Pharmacognosy

By George Edward Trease, Ph.C., Reader in Pharmacognosy and Head of the Department of Pharmacy, University of Nottingham; (and Assistants). Ed. 5. The Williams & Wilkins Company, Baltimore. 1949. Price, $8.

For pharmacy students.

Operations of General Surgery

By Thomas G. Orr, M.D., Professor of Surgery, University of Kansas School of Medicine. Ed. 2. W. B. Saunders Company, Philadelphia. 1949. Price, $13.50.

The more than 700 fine illustrations should make this work a valuable addition to every surgeon's library. Although the text is descriptive, the illustrations supplement it well. Of course, additions and revisions have been made in this edition. Many new technics are described, as, for example, the technic of wound closure with steel wire, of transverse abdominal incisions, the repair of hernias using Cooper's ligament and many others. Important additions have been made to the chapters on the digestive system and on congenital anomalies as well as the surgical treatment of anomalies of the aortic arch. The use of ambiotics is emphasized.

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Diseases of the Aorta

By Nathaniel E. Reich, M.D., Associate in Medicine, Long Island College of Medicine. The Macmillan Company, New York. 1949. Price, $7.50.

Covers a field never discussed thoroughly before, namely the diseases of the aorta. Diagnosis and treatment are covered without the use of too many words. The illustrations are good. But why take up so much space with references to the literature?

Textbook of Ophthalmology

By Sir W. Stewart Duke-Elder, M.D., Director of Research, Institute of Ophthalmology, University of London. Vol. IV. The Neurology of Vision; Motor and Optical Anomalies. The C. V. Mosby Company, St. Louis. 1949. Price, $20.

This is one of a series of 6 books on the eye. It covers the ground completely and in a perfectly readable style. It is one of the best books on the subject included in this volume and will, no doubt, be hailed loudly and widely by all ophthalmologists.

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Fundamentals of Otolaryngology

By Lawrence R. Boies, M.D., Clinical Professor of Otolaryngology, University of Minnesota Medical School, and Associates. W. B. Saunders Company, Philadelphia. 1949. Price, $6.50.

The author did not intend to write a complete textbook. He presents for the medical student, as well as the physician who is not a specialist, the fundamentals of otolaryngology. The book is well illustrated and not burdened with too many references.

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Surgical and Maxillofacial Prosthesis

By Oscar Edward Beder. King's Crown Press, Columbia University, New York. 1949. Price, $3.

Palmer--Stomach Disease as Diagnosed by Gastroscopy

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